No. 94-390

Supreme Court, U.S.
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In The

Supreme Court of the United States

October Term, 1994

AMERICAN WATER DEVELOPMENT, INC.
a Colorado Corporation,

Petitioner,

v.

CITY OF ALAMOSA, *et al.*,

Respondents.

On Petition For Writ Of Certiorari To The Colorado Supreme Court

BRIEF OF THE RESPONDENTS IN OPPOSITION

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QUESTIONS PRESENTED

I. WHETHER THE COLORADO SUPREME COURT CORRECTLY DETERMINED THAT, UNDER AN ACT OF CONGRESS PASSED IN 1860, THE BACA HEIRS HAD WAIVED THEIR CLAIM TO THE VEGAS GRANDES AND IN RETURN ACCEPTED A GRANT FROM THE UNITED STATES OF PUBLIC DOMAIN LANDS WHICH DID NOT INCLUDE ANY RIGHTS UNDER SPANISH OR MEXICAN LAW.

II. WHETHER AWDI RAISED ITS DUE PROCESS ARGUMENT IN A TIMELY MANNER IN THE COLORADO COURTS; AND, IF SO, WHETHER COLORADO LAW PERMITS PERSONS TO OPPOSE WATER RIGHT APPLICATIONS WHO DO NOT SATISFY ANY STANDING REQUIREMENT; AND, IF SO, DID THE AWARD OF ATTORNEYS' FEES AND EXPENSES TO OBJECTORS IN THIS CASE AS A CONDITION TO VOLUNTARY DISMISSAL OF AWDI'S TRIBUTARY WATER RIGHT CLAIM VIOLATE DUE PROCESS.

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BRIEF OF THE RESPONDENTS IN OPPOSITION

Respondents State of Colorado, Rio Grande Water Conservation District,[1] and Rio Grande Water Users Association[2] file this brief in opposition to the Petition for Writ of Certiorari to the Colorado Supreme Court ("Petition") filed by American Water Development, Inc.

[1] On behalf of itself and the Conejos Water Conservancy District, the San Luis Valley Irrigation Well Owners, Inc., the City of Alamosa, the Town of Monte Vista, the Town of La Jara, the Town of Crestone, Saguache County, Rio Grande County, Alamosa County, Richard Blumenheim, Oliver Powell Roemer III, and Howard R. Platz.

[2] On behalf of itself and the San Luis Valley Water Conservancy District.

("AWDI"). There are numerous misstatements of fact and law in the Petition; however, Respondents will first state the two reasons the decision by the Colorado Supreme Court does not warrant review. In the remaining sections of the brief, Respondents describe the interests which could have been adversely affected by AWDI's water rights claims and perceived misstatements of fact and law in the Petition which could have a bearing on the issues that would properly be before the Court if certiorari were granted.

I. REASONS WHY THIS CASE SHOULD NOT BE REVIEWED BY THE COURT

The petition for a writ of certiorari filed by AWDI should be denied for two reasons.

First, AWDI greatly exaggerates the importance of the Colorado Supreme Court's decision. This case does not implicate "critical federal, state and private interests throughout the vast lands in the American Southwest that once belonged to Spain," as suggested in the Petition. Petition at 3. At most, the case affects five tracts of land selected by the heirs of Luis Maria Cabeza de Baca ("Baca heirs") pursuant to an act of Congress passed in 1860. *See AWDI v. City of Alamosa*, 874 P.2d 352, 360-62 (Colo. 1994) (describing the factual background to Baca Grant No. 4) (Petitioner's Appendix ("Pet.App.") at 14-20). In return for waiving their competing claim to a tract of land claimed by the Town of Las Vegas, New Mexico (known as the "Vegas Grandes"), Congress granted the Baca heirs the right to select up to five tracts of land from the public domain in the Territory of New Mexico. Pet.App. at 20-25.

Thus, this case does not implicate "the status of water under thirty-plus million acres of the Southwest, . . . " Petition at 14. Rather, it involves the nature of the rights which the Baca heirs and their successors obtained to the tracts of land selected pursuant to the 1860 Act.

The Colorado Supreme Court, after carefully examining the 1860 Act, the historical background leading to the adoption of the 1860 Act, and prior cases relating to the tracts of land selected by the Baca heirs, concluded that the Baca heirs had waived their competing claim to the Vegas Grandes and in return accepted a grant from the United States of public domain lands which did not include any rights under Spanish or Mexican law. Pet.App. at 20-29. AWDI contends that the Colorado Supreme Court's decision is contrary to this Court's decisions in *Shaw v. Kellogg*, 170 U.S. 312, 341 (1898), and *Central Colo. Imp. Co. v. Board of Cty. Comm'rs*, 95 U.S. 259 (1877), which, according to AWDI, held that Baca Grant No. 4 is "a confirmed Hispanic land grant." Petition at 13, 19. Those cases did not speak to that issue, and AWDI misreads these cases for reasons stated by the Colorado Supreme Court in its opinion. Pet.App. at 24-25.[3]

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[3] *Shaw v. Kellogg* merely held that the grant to the Baca heirs could not be challenged on the grounds that the lands selected were mineral in character, contrary to the terms of the 1860 Act. This Court held that the Surveyor General had approved the selection of Baca Grant No. 4 and that it could not be challenged long after the three year period for making such selections had expired. *Central Colo. Imp. Co. v. Board of Cty. Comm'rs*, 95 U.S. 259 (1877), involved a Mexican grant which had been confirmed by Congress under the Treaty of Guadalupe Hidalgo, not lands selected by the Baca heirs under the 1860 Act. AWDI's reliance on *Beard v. Federy*, 70 U.S. 478 (1866), is also misplaced. That case

There are no cases cited in the Petition, and Respondents are not aware of any cases, holding that the Baca heirs or their successors obtained rights to water underlying any of the Baca grants under Spanish or Mexican law. This novel theory was advanced for the first time in 1986 by AWDI when it filed its application with the Colorado District Court in an attempt to establish a right to withdraw ground water underlying Baca Grant No. 4 superior to all other water users, federal and state, in Colorado.

The inconsistent state court decisions cited by AWDI, Petition at 14-16, involve decisions relating to Spanish or Mexican land grants which *were* recognized and confirmed pursuant to the procedures established to implement the 1848 Treaty of Guadalupe Hidalgo. As AWDI concedes, the Colorado Supreme Court held that the Baca heirs obtained substitute lands from the public domain and did not receive grants under Spanish or Mexican law. Petition at 15, 17-18, 21. Thus, this case does not present whatever conflicts may exist in the cases cited in the Petition involving water rights incident to valid Spanish or Mexican land grants. Pet.App. at 25 n. 20.

Second, AWDI's due process argument was not raised until a petition for rehearing filed with the Colorado Supreme Court, which denied AWDI's petition for rehearing without opinion. Pet.App. at 131-32. Thus, the due process argument raised in AWDI's Petition is presented in the worst possible manner for the exercise of

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involved a confirmed grant under the laws of Spain or Mexico in the State of California.

the Court's discretionary jurisdiction due to AWDI's failure to raise the argument in a timely manner in the Colorado courts. Further, AWDI misstates the facts relating to the award of fees and costs as a condition to its motion to dismiss its tributary water right claim and misstates the law relating to standing in water right proceedings in Colorado.

The relevant facts are as follows. On September 26, 1991, less than one month before trial, and almost five years after AWDI had filed its application for underground water rights in the Colorado District Court and following extensive discovery conducted by both AWDI and the objectors, AWDI moved to dismiss, without prejudice, its tributary water right claim. Pet.App. at 57-58, 111. The objectors to AWDI's application argued that if the claim was to be dismissed without prejudice, the court should condition the dismissal on the payment of objectors' reasonable attorneys' fees, expenses, and costs in opposing the claim. Pet.App. at 57.

At the hearing on the motion to dismiss, counsel for AWDI objected to the payment of any fees and costs as a term and condition of dismissal but conceded that the trial court could impose terms and conditions to prevent prejudice to the objectors from a dismissal of the claim without prejudice. Respondents' Appendix ("R.App.") at 20a and 104a. Pursuant to Rule 41(a)(2) of the Colorado Rules of Civil Procedure, which is analogous to Federal Rule of Civil Procedure 41(a)(2), the Colorado Water Judge dismissed the claim without prejudice, but with terms and conditions which he deemed proper, including payment of the objectors' reasonable attorneys' fees, costs, and expenses related to opposing that claim.

Pet.App. at 57-58, 112-14. When advised of the Court's ruling, AWDI did not seek to withdraw its motion or request that it be allowed to proceed to trial on the tributary claim. R.App. at 21a. AWDI received a full and fair hearing on the reasonableness and the necessity for the amounts to be awarded. Pet.App. at 58. AWDI then appealed the award of attorneys' fees and costs as a term and condition to the dismissal. Pet.App. at 58-59.

On appeal, AWDI argued, based on Colorado law, that the trial court could not condition voluntary dismissal of its claim on payment of attorneys' fees, expenses, and costs under Colo.R.Civ.P. 41(a)(2). Pet.App. at 58-59. The Colorado Supreme Court rejected these arguments for reasons stated in its opinion. Pet.App. at 64-69.

In a petition for rehearing, AWDI for the first time raised the argument that the award of fees and expenses to objectors in water adjudication proceedings who did not meet traditional standing requirements was a violation of due process. This issue was not briefed, and the Colorado Supreme Court denied AWDI's petition without opinion. Pet.App. at 131-32.[4]

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[4] AWDI states that "[o]n appeal AWDI raised its cluster of standing, due process and related concerns in its opening brief, . . . ; in its reply brief, . . . ; in its petition for rehearing, . . . ; and during oral argument." Petition at 10. This statement is misleading. AWDI did not raise the due process argument until its petition for rehearing, and the Colorado Supreme Court denied the petition for rehearing without opinion. In deciding whether the federal issue was properly raised at the proper time it is assumed that "when the highest state court has failed to pass upon a federal question, . . . the omission was due to want

AWDI now claims that it is "fundamentally unfair" to award attorneys' fees and costs to "voluntary litigants who are not required to satisfy the most basic, fundamental requirements of standing." Petition at 26. AWDI contends that the Colorado legislature has allowed "any person" to intervene in water right cases in Colorado and that AWDI had "no control over who chose to be Objectors or the size of the money award granted to them." Petition at 26-29. This argument mischaracterizes objectors in water right proceedings as "voluntary litigants" and misstates the standing requirements in such proceedings.

The objectors were "voluntary litigants" only in the sense that they filed statements of opposition to AWDI's application. As a matter of due process, all interested persons are entitled to notice of the pendency of an action and an opportunity to be heard. *Mullane v. Central Hanover Bank & Trust Co.*, 339 U.S. 306 (1950); *Closed Basin Landowners Ass'n v. Rio Grande Water Conservation Dist.*, 734 P.2d 627, 633 (Colo. 1987). Because of the interrelated nature of appropriative water rights, *Nevada v. United States*, 463 U.S. 110, 140 (1983), all owners of water rights on a stream system whose rights could be adversely affected by an application for water rights are entitled to notice and an opportunity to be heard. *Closed Basin Landowners*, 734 P.2d at 632-35; *Stonewall Estates v. CF&I Steel Corp.*, 197 Colo. 255, 592 P.2d 1318, 1320 (1979).

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of proper presentation in the state courts. . . ." *Street v. New York*, 394 U.S. 576, 582 (1969).

Colorado has developed comprehensive statutory procedures to give notice to persons whose interests may be adversely affected by an application for water rights. *Colorado River Water Conservation Dist. v. United States*, 424 U.S. 800, 804 (1976); *Pueblo West Metro. Dist. v. Southeastern Colo. Water Cons. Dist.*, 689 P.2d 594, 601 (Colo. 1984) (describing notice procedure for water right applications). Standing to oppose applications to determine water rights is not limited to the owners of water rights because other persons also have interests which could be adversely affected by granting an application. *Bunger v. Uncompahgre Valley Water Users Ass'n*, 192 Colo. 159, 557 P.2d 389, 392 (1976). The class of persons who may oppose a water rights application is not unlimited, but is defined by other sections of the Water Right Determination and Administration Act. *Id.*

Thus, objectors who appear in water adjudications are not "voluntary litigants" who are not required to satisfy basic standing requirements. The objectors who filed statements of opposition to AWDI's application were owners of water rights or had other interests which could have been adversely affected by granting of the application. *See* Section II *infra*. Had AWDI raised its due process argument in a timely fashion in the courts below, the Respondents would have demonstrated that they had standing to oppose AWDI's application. Likewise, the Colorado courts could have addressed AWDI's argument that the class of persons who are entitled to oppose its application included "voluntary litigants" who "were not truly litigants." Petition at 28. Because AWDI did not raise this argument in a timely manner and did not challenge the standing of any of the objectors below, the

record is not adequate to review this issue and the Colorado courts were not given an opportunity to address the standing issue in light of the federal due process challenge now raised by AWDI. Thus, this is not an appropriate case for the exercise of the Court's discretionary jurisdiction.

II. INTERESTS OF THE OBJECTORS WHICH COULD HAVE BEEN ADVERSELY AFFECTED BY AWDI'S CLAIMS

The Statement of the Case presented by AWDI is incomplete and misleading.[5] The following facts will explain the nature of the claims made by AWDI and the interests of objectors which could have been adversely affected by those claims.

In 1986 AWDI filed an application for underground water rights in the Colorado District Court for Water Division No. 3 seeking to establish the right to withdraw 200,000 acre-feet of ground water per year from proposed wells to be located on lands owned or claimed by AWDI in the San Luis Valley ("the Valley") in south-central Colorado. Pet.App. at 7-9. Part of these lands included a tract of land known as Baca Grant No. 4. *Id.* at 8-9. In its application, AWDI asserted four alternate claims, including a claim to the water underlying Baca Grant No. 4 based on Spanish or Mexican law. *Id.* AWDI also claimed

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[5] Moreover, in its Petition, AWDI includes an affidavit of a former attorney for the State of Colorado, Pet.App. at 367-69, and refers to the affidavit in its Petition, Petition at 8, without advising the Court that the affidavit was not admitted into evidence. R.App. at 108a.

that the ground water was "nontributary" under Colorado law. *Id.*[6]

An understanding of the geography and history of the Valley is helpful to understand the significance of the claims made by AWDI and why there were many objectors who opposed the application. The Valley is approximately 100 miles long and 50 miles wide and averages only seven to eight inches of precipitation annually on the Valley floor. R.App. at 26a; *Alamosa-La Jara Water Users Protection Ass'n v. Gould*, 674 P.2d 914, 917 (Colo. 1983). There are two principal rivers that arise in and flow out of the Valley, the Rio Grande and the Conejos River. R.App. at 38a-39a. The normal surface flows of these two rivers and their tributaries have been fully appropriated since the turn of the century. *Alamosa-La Jara*, 674 P.2d at 918.

North of the Rio Grande is an area known as the Closed Basin, so named because the streams that flow from the surrounding mountains onto the Valley floor have no natural outlet. R.App. at 39a-40a. The Closed Basin includes several hundred thousand acres of highly productive irrigated farmland, the Great Sand Dunes National Monument, 16 U.S.C.S. 431, Proc. No. 1994, 47 Stat. 2506, the Closed Basin Project, a federal reclamation

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[6] "Nontributary" ground water is ground water which only has a remote connection to the flow of a natural stream. Colo.Rev.Stat. § 37-90-103(10.5), Repl. Vol. 15 (1990). The Colorado Supreme Court has said that an erroneous determination that water is nontributary can have a marked, if not devastating, effect on earlier decreed priorities. *Stonewall Estates v. CF&I Steel Corp.*, 592 P.2d at 1320.

project, P.L. 92-514, 86 Stat. 964, as amended, and several state and federal wildlife areas. On the east side of the Closed Basin, bordering the Great Sand Dunes National Monument on the north and the Closed Basin Project on the east, is Baca Grant No. 4. A map showing the location of these and other features of the Valley is found in R.App. at 118a.

The Valley is underlain by two principal aquifer systems, a shallow unconfined aquifer and a deeper confined aquifer. R.App. at 12a and 29a. AWDI states that "[r]oughly two billion acre feet of ground water exist in the San Luis Valley of southern Colorado." Petition at 3. What AWDI does not disclose is that only a small fraction of that water is of usable quality. R.App. at 37a-38a. It also fails to disclose that the Water Judge, after a trial, determined that the ground water that AWDI sought to withdraw was tributary to natural streams in the Valley. Pet.App. at 29-38; R.App. at 101a. An incorrect determination that the ground water was nontributary or was owned by AWDI under Spanish or Mexican law could adversely affect water users with water rights with earlier priorities, under either state or federal law, for reasons which are explained below. Likewise, AWDI's tributary claim, if not properly subject to terms and conditions, could adversely affect senior water rights.

The waters of the Rio Grande above Fort Quitman, Texas, are apportioned between the States of Colorado, New Mexico, and Texas pursuant to an interstate compact. The Rio Grande Compact, which was approved by Congress in 1939, 53 Stat. 785 (1939), was intended to preserve existing levels of use in Colorado, New Mexico, and Texas, while allowing the United States to fulfill its

treaty obligations to the Republic of Mexico. *Alamosa-La Jara*, 674 P.2d at 918-19 (describing circumstances leading to adoption of the compact and its provisions). In 1966, Texas and New Mexico brought an original proceeding in this Court alleging that Colorado had violated the Compact. *Texas and New Mexico v. Colorado*, Original No. 29, October Term, 1966; *Alamosa-La Jara*, 674 P.2d at 919.

Colorado settled the dispute with Texas and New Mexico by a stipulation, which required Colorado to meet its state line delivery obligation on an annual basis without allowance for any debits or credits and to use all available administrative and legal powers, including curtailment of diversions, to assure annual compliance. *Texas v. Colorado*, 391 U.S. 901 (1968); *Alamosa-La Jara*, 674 P.2d at 919. The result of that stipulation was a substantial curtailment of diversions by senior surface water rights in existence well before the signing of the Compact. *Alamosa-La Jara*, 674 P.2d at 919. To assist in complying with that stipulation, the Colorado State Engineer ceased issuing well permits for new appropriations of ground water from both the confined aquifer and unconfined aquifer outside of the Closed Basin. *Id.*; R.App. at 61a. In 1981, the Colorado State Engineer determined that there was no remaining unappropriated ground water in the unconfined aquifer of the Closed Basin and ceased issuing well permits for new appropriations. R.App. at 61a.

Located in the Closed Basin in the vicinity of the Baca Grant No. 4 is the Closed Basin Project (the "Project"), a federal reclamation project. The Project salvages ground water from the sump area of the Closed Basin and delivers that water to the Rio Grande. R.App. at 48a-51a; *Closed Basin Landowners*, 734 P.2d at 629. A portion of the

project's water is used to assist the State of Colorado in meeting its obligation under the Rio Grande Compact and thereby makes more water available for use by existing water rights on the Rio Grande and the Conejos River in the Valley. R.App. at 70a-71a; *Closed Basin Landowners*, 734 P.2d at 629. Project water is also delivered to the Alamosa National Wildlife Area, the Blanca Wildlife Habitat Area, and Head and San Luis Lakes, the latter being natural lakes controlled by the Colorado Division of Wildlife. P.L. 92-514, 86 Stat. 964 as amended by P.L. 98-570, 98 Stat. 1941.

Thus, AWDI's application to establish the right to withdraw 200,000 acre-feet of ground water per year by proposed wells in the Valley could adversely affect the water rights of many water users in the Valley. For example, AWDI's own evidence showed, and the trial court found, that the water rights for the Closed Basin Project and the federal reserved water rights for the Great Sand Dunes National Monument would be significantly injured by AWDI's claims. R.App. at 51a-55a.

The Rio Grande Water Conservation District is the local sponsor of the Closed Basin Project, obtained the water right for the Project, and participates in the operation and maintenance of the Project. *Closed Basin Landowners*, 734 P.2d at 629-630; Colo.Rev. Stat. § 37-48-105, Repl. Vol. 15 (1990). The Rio Grande Water Users Association is an organization representing nearly all of the senior pre-compact water rights on the Rio Grande and whose members irrigate many thousands of acres of land with water from the Rio Grande and from wells. R.App. at 56a-57a. Its members have suffered large curtailment to comply with the Rio Grande Compact and that burden is

reduced by the Closed Basin Project. R.App. at 69a-70a. The trial court found that AWDI's claim would have significantly reduced their existing water supply and would have reduced the amount of water available from the Closed Basin Project to meet the State of Colorado's obligations under the Rio Grande Compact. R.App. at 90a.

The Colorado Division of Wildlife owns water rights and wildlife facilities within the Valley. The trial court found that its water rights for Head and San Luis Lakes would be injured by AWDI's claims. R.App. at 51a. The Colorado State Engineer is the Rio Grande Compact Commissioner for Colorado and the State official charged with the administration of water rights in Colorado and participates in water rights litigation to prevent injury to vested water rights. *Wadsworth v. Kuiper*, 193 Colo. 95, 562 P.2d 1114 (1977); Colo.Rev.Stat. §§ 37-80-102 and 37-92-501, Repl. Vol. 15 (1990).

Clearly, these objectors had standing to oppose AWDI's application. Except for the unsubstantiated allegation that "any person" was allowed to participate in the case, AWDI has not identified any objectors who lacked standing to oppose its application.

III. AWDI DOES NOT ACCURATELY DESCRIBE THE STATUS OF THE BACA GRANT NO. 4

AWDI's Petition is predicated upon a fundamental misstatement or misunderstanding of an act of Congress passed in 1854. AWDI's misunderstanding appears first at page 5 of the Petition, where it states:

> The 1854 Act also reserved all of the ceded Territory of New Mexico (which included the San Luis Valley of southern Colorado) from the public domain pending settlement of the land claims.

Even a cursory review of the 1854 Act (Pet.App. at 220-226) makes it clear that the Act did not withdraw all of the ceded territory of New Mexico. The last phrase of Section 8 of the 1854 Act reads as follows:

> . . . and, until the final action of Congress on such claims, all lands covered thereby shall be reserved from sale or other disposal by the government, and shall not be subject to the donations granted by the previous provisions of this Act.

Pet.App. at 224. The only lands reserved from sale or other disposal by the 1854 Act were those lands then subject to pending land claims. The land which is now included in Baca Grant No. 4 was not subject to such a claim in 1854. *Id.* at 22. From the time the Treaty of Guadalupe Hidalgo was ratified by Congress in 1848 until 1862, when it was selected by the Baca heirs, Baca Grant No. 4 was part of the vacant public domain subject to entry or donation pursuant to the laws of the United States. *Id.* at 19.

AWDI's fundamental misunderstanding of the 1854 Act is again apparent at page 22 of its brief, where it states:

> As explained above, even if the Baca grant is not recognized as a cession directly from Spain and Mexico, it was created out of lands *reserved* by

> Congress in § 8 of the 1860 Act in discharge of its Treaty obligations. [Emphasis in original.]

There is no Section 8 in the 1860 Act. Pet.App. at 234-37. Presumably, AWDI intended to refer to Section 8 of the 1854 Act; however, the statement is based upon the assumption that all of the ceded territory of New Mexico was reserved from sale or other disposal by Congress in 1854, which is simply not correct. Only those lands that were covered by pending claims were reserved from sale or other disposal until Congress had an opportunity to review such claims. Act of July 22, 1854, § 8; Pet.App. at 223-24.

In accordance with Section 8 of 1854 Act, the Surveyor General prepared a report on claims to lands under the laws of Spain and Mexico, dated December 18, 1858, which was transmitted to Congress. H.R. Exec. Doc. No. 14, 36th Cong., 1st Sess. (1860). Pet.App. at 156-94. The report covered Spanish and Mexican claims numbered 20 through 38. *Id.* at 157. Claim No. 20 constituted the claim to the Vegas Grandes. *Id.* at 158. The Surveyor General determined that there were two conflicting grants to the Vegas Grandes. The purpose and effect of the Surveyor General's investigation is made clear in the last paragraph of his report:

> It is firmly believed that the land embraced in either of the two grants is lawfully separated from the public domain and entirely beyond the disposal of the general government, and that in the absence of the one the other would be a good and valid grant; but as this office has no power to decide between conflicting parties, they are referred to the proper tribunals of the country for the adjudication of their respective

> claims, and the case is hereby respectfully referred to Congress through the proper channel for its action in the premises.

Pet.App. at 193-94. Thus, in the Surveyor General's opinion, the Vegas Grandes, which was subject to two competing claims, was separated from the public domain and could not be disposed of by the federal government; that is all that occurred under the 1854 Act.

All lands acquired by the United States under the Treaty of Guadalupe Hidalgo that were not subject to valid Spanish or Mexican grants at the date of the Treaty became part of the public domain with the United States as proprietor. *United States v. Sandoval*, 167 U.S. 278, 296-97 (1897). AWDI has no basis, other than a bald-faced misreading of the 1854 Act, to support its statement that the land included in Baca Grant No. 4 was not a part of the public domain in 1862 when it was selected by the Baca heirs under the 1860 Act.

On February 28, 1861, the Territory of Colorado was organized, Ch. 59, 12 Stat. 172 (1861), which included the land now included in Baca Grant No. 4. Pet.App. at 19. The first legislative assembly of the Territory of Colorado was held on September 9, 1861, and the first laws of the territory were passed at that time. *See* General Laws of Colorado, 1st Sess., Legislative Assembly, Territory of Colorado, 1861. These laws preserved the custom of the appropriation doctrine which previously existed in lands that became the Territory of Colorado. Pet.App. at 28 n. 21; *Coffin v. Left-Hand Ditch Company*, 6 Colo. 443, 448 (1882). Those lands included the property that was selected as Baca Grant No. 4. Over a year later, on December 12, 1862, John S. Watts, attorney for the Baca heirs,

selected the Baca Grant No. 4 as one of the five tracts of land which Congress had permitted in the 1860 Act. *Shaw v. Kellogg*, 170 U.S. at 315-16. The land was surveyed in 1863 and in 1864 the title passed pursuant to the 1860 Act. Pet.App. at 19.

AWDI goes to great lengths to discuss the manner in which water is allocated in Colorado. At no point in its discussion does AWDI cite *California Oregon Power Co. v. Beaver Portland Cement Co.*, 295 U.S. 142, 163-64 (1935), in which the Court held that federal land conveyances do not inherently carry water rights. The nature and extent of water rights, if any, accompanying such conveyances are, unless the federal government otherwise provides, determined by the law of the locality in which the tract is situated. *California Oregon Power Co. v. Beaver Portland Cement Co.*, 295 U.S. at 162.

AWDI predicates its argument on the theory that the grant to the Vegas Grandes made under Spanish or Mexican law was transferred to the lands selected by the Baca heirs. Petition at 17. This Court has described the resolution of the competing claims to the Vegas Grandes as follows:

> Congress accommodated the dispute by a magnificent donation of lands to the heirs of Baca, and confirmed the original land to the Town; . . .

Maese v. Herman, 183 U.S. 572, 581 (1902). Every other court that has examined the issue has held that by accepting Congress' grant, the Baca heirs waived their claim to the Vegas Grandes. In *Lane v. Watts*, 234 U.S. 525, 541-42

(1914), the Court observed that "to accommodate conflicting claims, and at the instance of the government, the Baca claimants gave up their rights to a definite tract of land. . . . " The Ninth Circuit Court of Appeals, in examining and rejecting a claim presented by certain Baca heirs who did not participate in the Congressional compromise, described the circumstance as follows:

> Those who claimed under that prior grant waived their priority in favor of the Town of Las Vegas, in consideration of which waiver, Congress made to them a grant of other lands not covered by any Mexican grant, one of which tracts is that here in controversy.

Wise v. Watts, 239 F. 207, 226-27 (9th Cir.), *cert. denied*, 244 U.S. 661 (1917) (concerning Baca Grant No. 3 in the State of Arizona).

There is no conflict between the Colorado Supreme Court decision and the decision of any other court concerning the Baca grants. Nor are there any special and important reasons which would warrant review of the decision of the Colorado Supreme Court.

IV. AWDI DOES NOT ACCURATELY DESCRIBE THE WATER COURTS OR THE PROCEDURES FOR ADJUDICATING WATER RIGHTS IN COLORADO

AWDI does not accurately describe the water courts in Colorado. The State of Colorado, like most western states, relies upon the doctrine of prior appropriation in establishing rights to use water. *Colorado River Water Conservation District v. United States*, 424 U.S. 800, 805 (1976).

The prior appropriation system requires the permanent fixing of the right to use water at the time of the adjudication. *United States v. District Court*, 401 U.S. 520 (1971). The Water Right Determination and Administration Act of 1969, Colo.Rev.Stat. §§ 37-92-101 through 602, Repl. Vol. 15 (1990) and Cum. Supp. (1994) ("1969 Act"), provides the current statutory framework for adjudication of rights under a system of priorities. The 1969 Act established the position of water judge within each of seven water districts in Colorado. *State v. Southwestern Colo. Water Cons. Dist.*, 671 P.2d 1294, 1308 (Colo. 1984). In Colorado, the trial court of general jurisdiction is the district court. Colo. Const., Art. VI, Sec. 9. Water judges are district court judges who are designated by the Colorado Supreme Court to hear water matters in addition to their regular duties of a district judge. Colo.Rev.Stat. § 37-92-203(2), Repl. Vol. 15 (1990). Water judges have exclusive jurisdiction over "water matters" within their water division. *Id.*, § 37-92-203(1).

AWDI suggests that the Colorado water courts are specialized tribunals that may not constitutionally make binding and enforceable awards of money between private parties. Petition at 28. This is not correct. As discussed above, district courts are the constitutionally established trial courts of general jurisdiction in Colorado. The water judges are simply district court judges who have exclusive jurisdiction over water matters. Thus, these courts do not raise the problems created by the specialized tribunals disapproved of in *Northern Pipeline Construction Co. v. Marathon Pipe Line Co.*, 458 U.S. 50, 87 (1982).

AWDI also has not properly described the statutory procedures used to determine water rights in Colorado. Because common law forms of action and bills in equity were inadequate to determine appropriative water rights, Colorado at an early date established statutory procedures for determination of water rights, which include notice by publication. *The Union Colony of Colorado v. Elliott*, 5 Colo. 371, 378-80 (1880). Instead of requiring a party seeking a water right to personally serve all necessary parties, the statutory provisions require the clerk of the water court to publish notice of all applications received by the court in the preceding month (called the "resume") in local newspapers and by mailing the resume to individuals who have requested a copy of the resume. Colo.Rev.Stat. § 37-92-302(3), Repl. Vol. 15 (1990). Any person whose interests may be adversely affected may file a statement of opposition to the water right applications published in the resume. Colo.Rev.Stat. § 37-92-302(1)(b), Repl. Vol. 15 (1990).

AWDI bases much of its due process argument on its contention that the 1969 Act does not impose a standing requirement on persons who may file statements of opposition. Petition at 26-29. AWDI's contention appears to be based on a misreading of *Bunger v. Uncompahgre Valley Water Users Association*, 192 Colo. 159, 557 P.2d 389 (1976).

In *Bunger* an applicant asserted that an objector to his water right application did not have standing to challenge his application in the water courts. 557 P.2d at 392. The applicant relied on cases decided under the Adjudication Act of 1943, which had limited objectors to owners or claimants of water rights. *Id.* The Colorado Supreme Court in *Bunger* held that the 1969 Act is not as limiting

as the 1943 Act. *Id.* The Court further held that the 1969 Act allowed those persons whose capacity to protest or object is generally described in the 1969 Act to participate in water court proceedings. *Id.* The *Bunger* court did not eliminate standing requirements altogether, nor did the 1969 Act.[7]

Water rights are considered property interests in Colorado. *Gardner v. State*, 200 Colo. 221, 614 P.2d 357 (1980). There is certainly evidence in the record to demonstrate that objectors could have established standing if the issue had been raised by AWDI in the trial court. *See supra* pp. 10-14. Each one of the Objectors that were awarded costs and attorney fees following AWDI's dismissal of the tributary claims owned or otherwise had an interest in water rights that would have been injured by granting AWDI's water right application.

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[7] For example, the Colorado Supreme Court in *Bijou Irrigation Dist. v. Empire Club*, 804 P.2d 175, 187 n. 20 (1991), raised standing *sua sponte* and stated that while the objectors did not allege injury to a water right of their own, their allegation of injury to other legal rights would have been sufficient to satisfy general principles of standing.

V. CONCLUSION

For the reasons stated, the Petition for Writ of Certiorari in this matter should be denied.

Respectfully submitted,

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No. 94-390

In The

Supreme Court of the United States

October Term, 1994

AMERICAN WATER DEVELOPMENT, INC.,
a Colorado Corporation,

Petitioner,

v.

CITY OF ALAMOSA, *et al.*,

Respondents.

On Petition For Writ Of Certiorari
To The Colorado Supreme Court

APPENDIX TO BRIEF IN OPPOSITION OF STATE OF COLORADO, RIO GRANDE WATER CONSERVATION DISTRICT, AND RIO GRANDE WATER USERS ASSOCIATION

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DISTRICT COURT, WATER DIVISION 3, COLORADO

CASE NO. 86-CW-46

FINDINGS OF FACT, CONCLUSIONS OF LAW, JUDGMENT AND DECREE

CONCERNING THE APPLICATION FOR WATER RIGHTS OF:

AMERICAN WATER DEVELOPMENT, INC.,

IN ALAMOSA, CONEJOS, COSTILLA, HINSDALE, MINERAL, RIO GRANDE AND SAGUACHE COUNTIES.

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THIS MATTER came before the Court on the Application for Underground Water Rights or, in the Alternative, for the Determination of Rights to Nontributary Groundwater Outside of Designated Groundwater Basins. The trial began October 15, 1991 and continued until completion on November 22, 1991. The Applicant was represented by Mr. David C. Hallford and Mr. Thomas S. Crabb of Saunders, Snyder, Ross and Dickson, P.C. There were five principal objectors that appeared and presented evidence at trial. The Objector Rio Grande Water Conservation District, appearing on behalf of itself and the Joint Objectors[1] (collectively "Joint Objectors"), was represented by Mr. David W. Robbins of the firm of Hill & Robbins, P.C. The Rio Grande Water Users Association ("Water Users") was represented by Mr. William A. Paddock of Carlson, Hammond & Paddock. The United States of America was represented by Mr. John R. Hill, Jr. and Mr. James J. DuBois of the Department of Justice. The State Engineer and the Division Engineer, the Colorado

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[1] The following Objectors appeared with the District jointly for purposes of this case: Conejos Water Conservancy District, San Luis Valley Water Conservancy District, San Luis Valley Irrigation Well Owners, Inc., the City of Alamosa, the Town of Monte Vista, the Town of La Jara, the Town of Crestone, Alamosa County, Saguache County, and Rio Grande County.

Division of Wildlife and the Colorado Water Conservation Board (collectively "State") were represented by Mr. Bradley W. Cameron and Ms. Christine A. Klein, Assistant Attorneys General for the State of Colorado. Mr. Fred Bauder appeared pro se. The Court, having considered the files herein, the pleadings, the evidence presented at trial, and the arguments of the parties, finds as follows:

I. PROCEDURAL BACKGROUND

> "Next to blood relationships, which rule the valley, come water relationships. The arteries of ditches and bloodlines cut across each other in patterns of astounding complexity. . . . As mayordomo you become the pump, the heart that moves the vital fluid down the artery to the little plots of land on each of the cells, the parciantes."
>
> – Stanley Crawford

1. The original application was filed on December 31, 1986 by American Water Development, Inc., the Baca Ranch Company, and the Baca Ranch Corporation (collectively "Applicant").[2] An amendment to legal descriptions in the original application was filed on February 23, 1987. The original application as amended was published in the manner required by law. Due to errors in the newspapers publications of the original application, on March 26, 1987, the Court ordered republication of the application

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[2] Upon granting of the motion for leave to file the Amended Application, American Water Development was the sole Applicant. For ease of reference the term Applicant is used throughout.

and extended the period for filing of statements of opposition until the last day of May, 1987.

2. Statements of opposition to the original application were timely filed by City of Alamosa; County of Alamosa; Richard Angel; Baca Grande Water and Sanitation District; Fred Bauder; Cyril Clayton; David P. and Barbara J. Collins; Colorado Division of Wildlife; Colorado Water Conservation Board; Conejos Water Conservancy District; Concerned Citizens of Crestone (Bill Hutchinson, James Kent Murray, Robert W. King); Town of Crestone; Tom Enos; First Interstate Bank of Denver; First Pegasus Corporation; Harold L. and Terry Lee Freel; Fullenwider Ranch, Inc.; Ernest T. and Grace Harer; Town of Hooper; Town of La Jara; John M. Lawrence; Town of Monte Vista; Jimmy R. and Mary Moore; Darrel and Harold Neese; Edward R. Oliver; Howard Platz; Rio Grande County Commissioners; Rio Grande County Farm Bureau; Rio Grande Water Conservation District; Rio Grande Water Users Association; Rito Alto Ranches; Arthur L. and Ileen J. Rivale; County of Saguache; Town of Saguache; San Luis Valley Irrigation Well Owners, Inc.; San Luis Valley Water Conservancy District; Thomas C. Sanderson; Loren R. and Julie A. Santisteven; Neil F. Seitz d/b/a Valley View Hot Springs; David G. Stagner; the State Engineer and the Division Engineer for Water Division 3; The Travelers Insurance Company; the United States of America; Weiss Ranches, Inc.; A. L. Wood; and Erwin and Lynn Young. By Order dated January 10, 1989, Otaka International was permitted to intervene in these proceedings. By Order dated May 7, 1990, Rocky Mountain Bison, Inc. was substituted for Otaka International.

Neil F. Seitz withdrew his statement of opposition pursuant to a stipulation and agreement dated June 10, 1988.

3. By Order dated October 7, 1990, *nunc pro tunc*, August 31, 1990, the Court granted the Applicant leave to file an amended application. Each statement of opposition filed to the original application was deemed to apply to the amended application. New statements of opposition to the amended application were filed by Wagner Ranch; J. Richard and Mary A. Johnson; D. Robin Hood; John M. Woodard; Thomas F. and Annabelle R. Trim; Eugene W. Freel and Beverly Freel; Rito Alto Ranch, Inc. (M. Shellabarger, President); Rito Alto and San Luis Ranches, Inc. (M. Shellabarger, Vice President); Eugene W. and Beverly Freel with Martin T. Shellabarger and Patricia Shellabarger; Cotton Creek Ranch by John C. Mattingly, General Manager; Lena C. Chiles, Floyd D. Chiles and Terry R. Chiles; Robert A. Owens; Edwin Pace; Fred J. Davie and Douglas M. Davie; Ernest Lamar Goodwin; Dave Collins; Villa Grove Area Water Users (c/o Amber Shook); Bonanza Road Water Users, an association (c/o Eugene Augusto); Richard Blumenhein; Gayle A. Nichols; Kenneth L. and Mary F. Skoglund; LD Ranch; Henry R. and Mable A. Lamm; 44 individuals later identified as Concerned Citizens of the San Luis Valley Water (c/o Barbara Mertian); Haidakhandi Universal Ashram; Columbine Telephone Company; Spiritual Life Institute of America, Inc.; Timothy N. and Lori S. Lovato; Darell Keith Alexander-Alexander Ranch; Dennis L. Felmlee; Morfitt Bros. Farm, Inc.; Richard W. Hanby; Harold L. Bennett; Marold Ranches; Town of Moffat; Pamyla Hill; Michael R. Dennett; and Lazy KV Estates.

4. Tom Enos was removed from the mailing list by Order dated February 26, 1990, because the Court no longer had a current address for him on file. First Pegasus Corporation, A. L. Wood and Richard Angel were removed from the mailing list for the same reason by Orders dated November 8, 1990.

5. Timely and adequate notice of the original application and the amended application have been given in the manner required by law and the time for filing statements of opposition and for seeking leave to intervene has expired. None of the land or ground water involved herein is located within the boundaries of a designated ground water basin. The Court has jurisdiction over all of the subject matter, over the claims made by the Applicant and over all persons who have standing to appear as parties, whether they have appeared or not.

6. In accordance with §37-92-302(2), C.R.S., the office of the State Engineer issued its determination of facts on April 29, 1987, and the Court has given it due consideration.

7. From its inception this case has been fraught with procedural, discovery and other disputes. The first such dispute involved who would serve as counsel for the Applicant. That dispute was resolved when on October 15, 1987, the law firm of Saunders, Snyder, Ross and Dickson, P.C., entered its appearance as co-counsel on behalf of the Applicant. At all times subsequent to October 15, 1987, the Applicant has been represented in this matter by the law firm of Saunders, Snyder, Ross and Dickson, P.C.

8. Thereafter, the parties pursued discovery and a substantial number of motions to compel, motions for protective orders and motions to strike were heard and resolved by the Court.[3]

9. In May of 1990, after three and one-half years of discovery and extensive motions practice, the Joint Objectors, the Water Users, and the United States of America filed a Motion to Enter Case Management Order. The State of Colorado joined in the motion but requested modification of certain of the proposed deadlines. The stated purpose of the motion was to establish both the steps remaining to be completed prior to trial and the schedule for doing so. The Applicant responded that a time table to complete discovery and to prepare for trial would be desirable but raised numerous procedural and other objections to the Order proposed by the Objectors.

10. A hearing on the Motion to Enter Case Management Order was held on July 5, 1990. The Applicant initially resisted any scheduling or trial settings. Eventually, the Applicant agreed to a tentative trial setting in October, 1991. The parties were then able to agree on deadlines for completion of expert and non-expert discovery, and a deadline for dispositive motions. The Court ordered, with the Applicant's consent, that any amendment to the pleadings be filed within ninety days, with no amendments to be made thereafter.

11. During the course of the July 5, 1991 hearing on the Motion to Enter Case Management Order, the Applicant made plain to the Court that it was not willing to

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[3] For an expression of the court's frustration at times, see Order dated April 6, 1990. It represents an unconventional approach to dealing with on-going discovery problems.

affirmatively set forth the basis for its claims and the opinions of its experts until it knew the opinions of each of the Objectors' expert witnesses. The Objectors asserted that they would not be in a position to determine the identity of all of their experts, their opinions or the full extent of injury claimed until they knew the substance of and the basis for the opinions of the Applicant's experts. After hearing the arguments of counsel, the Court took the matter under advisement. Thereafter, the Applicant submitted to the Court a proposed Case Management Order substantially similar to that proposed by the Objectors, except for the provisions on expert discovery.

12. During the course of the trial, the Court came to appreciate the reason for the Applicant's opposition to the Case Management Order. It is apparent that although the Applicant brought the case and bore the burden of proof, in 1986, and perhaps even today, it had no clear plan how to successfully prove its nontributary claim. It therefore wanted to require the Objectors to first engineer their defense to the claim so that the Applicant could then attempt to engineer its way around the Objectors.

13. On July 11, 1990, the Court entered its Case Management Order to govern the steps to be taken by the parties prior to trial and the deadlines for completing those tasks. Among the deadlines established were a general discovery cut-off and sequential disclosure of expert opinions and deposition of experts. During the remaining course of the proceedings, the Case Management Order was amended to adjust for changed circumstances and to insure full and complete discovery to all parties.

14. Pursuant to the procedures of the Case Management Order, the Applicant identified some 27 expert witness [sic] that it proposed to call at the time of trial. It withdrew six of the designated witnesses prior to the time for their depositions. After completion of discovery of the Objectors' expert witnesses, the Applicant sought and was granted leave to identify and designate rebuttal experts. On September 24, 1991, the Applicant provided the names and summaries of the opinions and testimony of its twelve rebuttal experts, four of whom had been identified as experts for the Applicant's case in chief. The Objectors were afforded an opportunity to depose the rebuttal experts prior to the time of trial.

15. The entry of the Case Management Order did not end the discovery disputes. In November of 1990, the Court held a telephonic conference regarding the deposition of Applicant's expert, Dan Ault, and the very narrow construction the Applicant placed on the permissible scope of expert discovery. At that time the Court was required to direct the Applicant that the limitations it sought to impose were too narrow and not in compliance with applicable law. Subsequently, it was learned that some of the Applicant's 27 identified experts had not completed their work or fully formed their opinions. An extension of time to depose these experts was granted until the Applicant certified the experts' work had been completed.

16. There were also a number of motions for protective orders filed by the Objectors in response to a large number of blanket-type written discovery requests filed by the Applicant on or about the last day for filing written discovery. For example, the United States sought

and was granted a protective order against the Applicant's November 30, 1990 discovery requests of 209 pages containing 3,838 interrogatories and subparts. There were likewise motions for protective orders filed by the Objectors in response to Applicant's noticing of some 21 depositions to be conducted in three cities in the remaining 14 working days of December, 1990. The Applicant filed a like motion in response to depositions noticed by the Objectors in December. These matters were handled by telephone conference and resolved by the Court's order of January 15, 1991.

II. APPLICANT'S CLAIMS FOR RELIEF

> "In my youth I took to the Law, And argued each case with my wife; And the muscular strength, Which it gave to my jaw, Has lasted the rest of my life."
>
> – Lewis Carroll

17. The original application in this case sought the right to withdraw 200,000 acre-feet of ground water per year from 112 proposed wells to be located on the lands owned or claimed by the Applicant. The Applicant claimed to be the owner of more than 100,000 acres of land in the San Luis Valley located in two distinct areas. The majority of the lands include the so-called Baca Grant No. 4 and parcels of land adjacent thereto. The balance of the lands are located some twenty miles to the north in the vicinity of the Town of Villa Grove, where the Applicant claims to own approximately 4,683 acres of land. The

relative locations of these land holdings and other important features in the Valley are shown on Objectors' Exhibit US 154.

18. The 112 wells proposed in the original application were to be 2,500 feet deep and perforated from 200 feet to 2,500 feet in depth. The claimed pumping rate was 5,000 gallons per minute or 11.14 cubic feet per second, conditional, per well. Ninety-two of the wells were to be located on the Baca Grant No. 4, nine of the wells were to be located on lands located just west of the Baca Grant No. 4 near the Town of Moffat, and the remaining eleven wells were to be located on the Applicant's property near the Town of Villa Grove.

19. The original application claimed water on four alternative bases. The first was a claim that the water was nontributary pursuant to §37-90-137(4), C.R.S., and subject to adjudication by this Court pursuant to §37-92-302, C.R.S.

20. The second claim involved Spanish and Mexican law. The Applicant's theory was essentially that the Baca Grant No. 4 was a replacement grant for one previously given to the Applicant's predecessor, Luis Maria Cabeza de Baca. The prior grant was alleged to be the Las Vegas Grandes, located in what is now the State of New Mexico near the Town of Las Vegas. The Applicant claimed that by various acts of the United States, the Treaty of Guadalupe Hidalgo, and Spanish and Mexican law, it was the owner of overlying land and had the right to absolute and undiminished use and disposition of all underground water, tributary or otherwise, that it might be able to capture through wells located on the Baca Grant No. 4.

This claim did not extend to any well not located on the Baca Grant No. 4.

21. The third claim for relief was pursuant to the Act of June 21, 1860, which the Applicant alleged was an absolute grant by the United States, authorizing the heirs of Cabeza de Baca to select up to five tracts of land in "replacement" for the land grant relinquished by them in New Mexico. The Applicant's theory was that the act of Congress divested the United States of all legal right, title and interest to the premises constituting the Baca Grant No. 4, segregated it from the public domain, and based upon its ownership, the Applicant was entitled to the absolute, undiminished disposition of all underground water, tributary or otherwise, which could be captured through wells located on the Baca Grant No. 4.

22. The final claim for relief in the application was for tributary ground water underlying all of the Applicant's lands. The original application claimed this water solely for use on the lands of the Applicant.

23. The source of water claimed in the application was the "San Luis Valley Aquifer," a term used by the Applicant throughout the course of the trial. The Court finds this term to have no descriptive value when applied to the hydrologic and geologic systems in the San Luis Valley. It is not a term in common usage by experts in the field, it is unsupported by the evidence offered at trial, and it fails to recognize the two distinct and separately managed aquifer systems which exist within the San Luis Valley.

24. The proposed use of the water under each claim for relief included the proposed irrigation of approximately 38,000 acres of land on or adjacent to the Baca Grant No. 4 in the San Luis Valley. The beneficial uses claimed included municipal, domestic, industrial, commercial, fire protection, irrigation, stock watering, recreation, fish and wildlife preservation and propagation, and all other beneficial uses. The water was claimed for use by immediate application to beneficial use, for storage and subsequent application to beneficial use, for exchange purposes, for replacement of depletions, for all other augmentation purposes, including taking credit for return flows resulting from the use of said water in plans for augmentation. The Applicant claimed these rights for itself, its successors, assigns, lessees and contractors.

25. The application also stated that it was only a claim for certain underground waters described in the application and was intended to be without prejudice to any future uses, claims or applications for surface water or underground waters which are not claimed in the application, including additional underground water from the lands subject to the application.

26. The amended application, filed in August of 1990, maintained the four alternative bases for claimed water as identified in the original application. However, the amended application changed the location of some of the wells and added additional wells. In the amended application, the Applicant sought approximately 117 wells located on the Baca Grant and adjacent properties owned by the Applicant and 15 wells to be located on the property owned near the Town of Villa Grove. The amended application continued to claim ground water

from wells perforated between 200 and 2,500 feet below ground surface and the source of water continued to be referred to as the "San Luis Valley Aquifer". The amended application also continued the Applicant's claim of right to produce 200,000 acre-feet of water annually for beneficial use from the wells described in the application but proposed to limit the initial production to 60,000 acre-feet as part of Phase I of its project. The pumping rate for each of the proposed wells was the same as in the original application, 5,000 gallons per minute.

27. The amended application claimed that approximately 30,000 acres of land on the Baca Grant No. 4 and the lands adjacent thereto and on the property near Villa Grove would be irrigated with water produced from the wells. Ten thousand acres were proposed to be irrigated through the first phase of the development. The Applicant also asserted the right to use water as a water supply for any additional properties that the Applicant may subsequently acquire within the State of Colorado and as a water supply for such other property along the Front Range within the State of Colorado as the Applicant may choose to supply. The amended application proposed to commit up to 30,000 acre-feet per year from the yield of the first phase to supply development of water along the Front Range of the State of Colorado with the remaining 30,000 acre-feet annually to be used within the San Luis Valley. The precise locus of use of the remaining 140,000 acre-feet of water claimed was not specifically stated. Presumably, a portion of this water would be required for irrigation of the remaining 20,000 acres of land described in the amended application. These claimed uses were said

to be applicable to each of the four alternative bases upon which the Applicant claimed entitlement to the water. For the tributary claim it continued to rely upon the appropriation date set forth in the original application. The Applicant continued to assert in the amended application that it sought only to adjudicate the rights claimed in the amended application without prejudice to any future claims the Applicant may choose to make for other rights from any source of supply. The amended application was the first time that the Applicant expressly pleaded that any tributary ground water would be used off its property or outside of Water Division No. 3.

28. The amended application contained a fifth claim for relief not set forth in the original application. That claim contained the Applicant's request that the Court make certain factual investigations and determinations about the presence or absence of injury from Applicant's proposed ground water pumping and what would be required to remedy that injury. The Applicant set forth alternative proposals to remedy any injury that the Court, as a result of its "factual investigations", might determine to exist. The so-called protective measures proposed by the Applicant included proposed changes of water rights, appropriative rights of exchange, and a plan for augmentation. The changes of water rights proposed by the Applicant, although not fully described in the application, apparently contemplated the change of water rights historically used for irrigation purposes to permit the historic consumptive use from those water rights to be used to offset the stream depletions resulting from the Applicant's pumping.

29. The Applicant also proposed to supply needed augmentation water by various exchanges, including various exchanges of water storage and release of water in Platoro Reservoir and other structures. Another proposed exchange contemplated use of the federal reclamation project known as the Closed Basin Project to deliver water either from Closed Basin Project wells or the Applicant's proposed wells to the Rio Grande, and thence delivery of the same by exchange to water users on the Rio Grande, La Jara Creek, the Alamosa River and the Conejos River to prevent injury. Although Claim V denominated portions of it as a plan for augmentation, Claim V in the amended application did not contain the information required for a complete statement of a plan for augmentation as contemplated by §37-92-302, C.R.S.

III. PARTIAL SUMMARY JUDGMENT RULINGS

> " . . . if it was so, it might be; and if it were so, it would be; but as it isn't, it ain't. That's Logic."
>
> – Lewis Carroll

30. Throughout the course of this case, there have been a substantial number of motions filed on questions of law, many of which sought partial summary judgment. The Court heard and granted or denied a number of such motions. Those rulings pertinent to an understanding of this case are described below.

31. Chronologically, the first such motion was the Joint Objectors' Motion for Partial Summary Judgment, seeking a ruling that the Applicant could not collaterally attack the Closed Basin Project and its decreed water right. *See Closed Basin Landowners Ass'n v. Rio Grande*

Water Conservation Dist., 734 P.2d 627 (Colo. 1987). The Court granted the motion and by Order dated September 28, 1989, barred the Applicant from challenging, in this case, the economic or physical feasibility of the Closed Basin Project; the right of the District to fully exercise its water rights consistent with the terms of the decree; and the reasonableness of the means of diversion of the Closed Basin Project wells. At the same time the Court denied as moot, and without prejudice, the United States' Motion for Partial Summary Judgment that certain State water law doctrines were inapplicable to the Closed Basin Project as a federal reclamation project. *See California v. United States*, 438 U.S. 645 (1978); *United States v. California State Water Resources Control Board*, 694 F.2d 1171 (9th Cir. 1982). Those rulings are reaffirmed and incorporated herein by this reference.

32. In response to the discovery propounded by the Objectors, the Applicant alleged that two statutes potentially applicable to its claims, §§37-82-101(2) and 37-92-102(1)(b), C.R.S., were unconstitutional, special legislation under Art. V, §25 of the Colorado Constitution. The Objectors moved for partial summary judgment seeking a determination that those statutes were not unconstitutional. By order dated May 8, 1990, the Court ruled that the statutes were constitutional and did not violate Art. V, §25 of the Colorado Constitution. That ruling is reaffirmed and incorporated herein by this reference.

33. The Objectors also moved for partial summary judgment dismissing Claims II and III of the application, the claims based upon Mexican and Spanish law, and upon an alleged grant under federal law. The Court heard argument on the motion and on July 5, 1990, entered an

Order granting partial summary judgment dismissing Claims II and III of the application. That ruling is reaffirmed and incorporated herein by this reference.

34. At the same time that the Objectors sought partial summary judgment dismissing Claims II and III of the application, the Applicant sought partial summary judgment that the Court had jurisdiction over those claims. The Applicant likewise sought a determination of certain questions of law governing its claim for nontributary ground water. By Order dated July 5, 1990, the Court granted Applicant's motion for partial summary judgment on the jurisdictional issue and made certain determinations requested by the Applicant regarding the law applicable to its claim for nontributary ground water. Those rulings are reaffirmed and incorporated herein by this reference.

IV. PRE-TRIAL CONFERENCE

"Let's muddy up the water."

– Water lawyer

35. By Order dated August 22, 1991, the Court set a Pretrial Conference for September 26, 1991, to address matters specified in the Court's order. At that time there were three unresolved claims remaining before the Court, *i.e.*, the claim for nontributary ground water, the claim for tributary ground water, and the claimed plan for augmentation, change of water rights, exchange and "mitigation" plan; namely Claims I, IV and V of the amended application. All pending motions in limine and dispositive motions filed pursuant to the Case Management Order were heard at that conference. The Applicant filed

two motions in limine apparently directed at evidence it believed would be offered against its tributary ground water claim. The first motion in limine sought to exclude evidence regarding the water rights applied for by the Water Users and the Conejos Water Conservancy District in Case Nos. 90CW42, 90CW45 and 90CW48. That motion was granted. The Applicant's second motion in limine sought to exclude evidence about certain alleged historical irrigation practices. That motion was denied without prejudice to raise an appropriate objection to such evidence, if offered, during trial.

36. At the Pretrial Conference the Court heard two motions for partial summary judgment filed by the Objectors. The first sought dismissal of the Applicant's claim for nontributary ground water. That motion was denied. The second sought to dismiss that portion of the Applicant's fifth claim that sought appropriative rights of exchange requiring use of water diversion, storage and conveyance facilities in which the Applicant owned no interest or had no contractual right of use. The Applicant made strenuous argument against granting of the motion. However, since the Applicant did not show the existence of a genuine issue as to any material fact, the motion was granted. At the hearing the Court also granted the Applicant's fourth motion to amend the Case Management Order, denied the Objectors' motion in limine regarding expert testimony of James Lancaster, and granted in part and denied in part the Objectors' motion regarding testimony by previously designated and withdrawn expert witnesses. Each of the motions in limine that was denied by the Court was without prejudice to raising a proper objection to evidence presented during the course of trial.

37. Near the conclusion of the Pretrial Conference, the lead counsel for the Applicant, Mr. Jack Ross, tendered to the Court and parties a motion to dismiss without prejudice under Colo.R.Civ.P. 41(a)(2) the Applicant's tributary ground water claim. This typewritten motion with accompanying proposed order had apparently been prepared prior to the Pretrial Conference and bore the same date as the Pretrial Conference. Thus, it is evident to the Court that the Applicant participated in the Pretrial Conference and argued its motions in limine and the partial summary judgment motion regarding the tributary claim with full knowledge that it intended to seek dismissal of that claim on that day. As the Objectors did not have proper notice of the motion and since it was not timely under the Case Management Order, the Objectors requested and were granted an opportunity to respond in writing. Accordingly, a briefing schedule was established and a second Pretrial Conference was scheduled for October 10, 1991.

38. Prior to the second Pretrial Conference, the Objectors filed responsive briefs and affidavits arguing that they would suffer legal prejudice if the tributary and related claims were dismissed without appropriate terms and conditions, including provision for payment of their attorneys' fees, costs and expenses for the defense of the tributary and related claims. The Applicant sought dismissal without prejudice and conceded that terms and conditions could be imposed by the Court. At the second Pretrial Conference, the Court orally granted the motion to dismiss without prejudice subject to the condition that the Applicant pay the Objectors their reasonable attorneys' fees, costs and expenses in opposing the tributary

and related claims. At that hearing the Applicant did not seek to offer any evidence and, when advised of the Court's ruling, did not seek to withdraw its motion or request that it be allowed to proceed to trial on the tributary ground water claim. The Court entered its written order on the Applicant's motion to dismiss on November 21, 1991, *nunc pro tunc*, October 10, 1991, and reserved for subsequent determination the amount, if any, to be awarded to the Objectors.

39. In advance of the second Pretrial Conference, the State of Colorado filed a motion to bifurcate the trial if the Applicant's motion to dismiss the tributary claim was granted. By that motion the State sought to limit the first phase of the trial to the issues that the Applicant was required to establish to prevail on its claim to nontributary ground water, reserving for the second phase of the trial any relevant question of mitigation of the injury, if any, shown by the Objectors in the first phase of the trial. The Court granted the motion and by virtue of the dismissal of the nontributary claim ordered herein, there remain no issues to be resolved, and the proposed second phase of the trial is not needed.

V. TRIAL OF THE NONTRIBUTARY CLAIM

> "There is something fascinating about science. One gets such wholesale returns of conjecture out of such a trifling investment in fact."
>
> – Mark Twain

40. The contentions of the Applicant in support of its nontributary claim may be summarized as follows.

The Applicant asserts that whether ground water is nontributary is to be determined by the effect of the pumping on natural streams. Applicant's Supplemental Trial Brief at 12. The Applicant further argues that this impact is to be determined solely by reference to the stream's surface flows, and not the alluvium or other underground water hydraulically connected to the surface stream. *Id.* at 14-17. While conceding that there are numerous natural streams in the Closed Basin of the San Luis Valley, it asserts that with only minor exceptions these streams are not in hydraulic connection with the underlying aquifer systems. *Id.* at 17-18. During the course of trial the Applicant also asserted that once these streams enter the Valley floor they lose their character as natural streams. The Applicant contends that these disconnected streams lose water through most of their reach to the underlying aquifer systems, but that its proposed ground water withdrawals will not increase the amount of stream losses and the water is therefore nontributary.

41. The Applicant acknowledges that the definition of nontributary ground water in §37-90-103(10.5) includes the effect of the proposed pumping on natural streams as defined in §§37-82-101(2) and 37-92-102(1)(b). The Applicant asserts that these sections do not apply to the unconfined aquifer of the San Luis Valley because that aquifer is not a natural stream. For it to qualify as a natural stream the Applicant argues that it must have beds, banks, and a definite channel. In addition the Applicant asserts that the unconfined aquifer is not underflow to any natural stream and is not tributary to any natural stream. On this basis it asserts that the impacts of its proposed pumping on the unconfined aquifer should not

be included in the determination of whether the water it seeks is nontributary.

42. The Applicant also acknowledges that injury to the vested water rights and decreed conditional water rights of others is an issue that this Court must address in determining whether to grant its application for nontributary ground water. *Id.* at 24-31. It argues, however, that the doctrine of "maximum utilization" first announced in *Fellhauer v. People*, 176 Colo. 320, 447 P.2d 986 (1968), effectively precludes any claim of injury by existing underground water rights in the unconfined aquifer. Instead, it argues that such water rights may first have to deepen their wells before complaining of injury. *Id.*

43. The Objectors disagree with both the Applicant's legal theory and factual claims. The Objectors claim that the streams of the San Luis Valley are natural streams that, for some or all of each year and over some or all of their length, are in hydraulic connection with the unconfined aquifer. They contend that the Applicant's pumping will deplete the flow of natural surface streams in an amount in excess of 1/10th of one per cent of the amount of water to be withdrawn annually and, on that basis alone, is tributary. They also contend that the unconfined aquifer and all ground water hydraulically connected thereto is "underground water" as defined in §37-92-103(11) and "waters of the state" as defined in §37-92-103(12), and is therefore water of a natural stream.

44. The Objectors also contend that the Applicant must establish the absence of injury to the vested and decreed conditional water rights to waters of a natural

stream. Each of the principal Objectors, including the State of Colorado, presented evidence of injury to water rights that would occur if the application was granted. Finally, the Objectors contend that the doctrine of "maximum use" relied upon by Applicant is really a doctrine of optimum use that requires the Court to look at all relevant factors, including the environmental impacts of the Applicant's proposed ground water withdrawals. *See Alamosa-La Jara Water Users Ass'n v. Gould*, 674 P.2d 914 (1983).

45. For the reasons stated below, the Court generally finds in favor of the Objectors and against the Applicant. The Court finds that overall the Applicant's evidence was not credible and that the Applicant ignored or distorted fact in it [sic] efforts to establish that the water it sought was nontributary. The principal facts upon which the Court finds against the Applicant and for the Objectors are stated below.

46. This case came on for trial on October 15, 1991, and continued until November 22, 1991. During the twenty-nine days of trial the Applicant presented testimony from eight expert witnesses and one lay witness and introduced a total of 241 exhibits. The four principal Objectors presented testimony from ten expert witnesses and introduced 234 exhibits. Pro se Objector Fred Bauder testified and presented nine exhibits.

47. The Applicant's evidence consisted principally of information about the geology and hydrology of the San Luis Valley. The Applicant incorporated its opinions about the geology and hydrology of the Valley into a ground water flow computer model. The computer model

was then used to make predictions about the impacts of the Applicant's proposed ground water pumping. The Applicant's experts relied upon their views of the Valley's geology and hydrology and the results of the computer model simulations as the basis for their opinion that the ground water the Applicant proposes to withdraw is nontributary as defined in §37-90-103(10.5), C.R.S.

48. The Objectors disputed much of the geological and hydrological evidence offered by the Applicant and contended that the water sought was tributary and its withdrawal would injure the vested water rights and decreed conditional water rights of others. The Objectors likewise disputed the reliability and accuracy of the Applicant's computer model and submitted substantial evidence on these issues. The Objector State of Colorado submitted its own computer model of the San Luis Valley and asserted its results showed the ground water sought by the Applicant is tributary ground water. During its cross-examination and on rebuttal, the Applicant disputed the accuracy of the Objectors' views of the Valley's geology and hydrology, the claimed injury and the reliability of the State's computer model.

49. In order to resolve these conflicting claims and to determine whether the ground water sought by the Applicant is nontributary and whether the application may be granted, it is necessary for the Court to make detailed findings regarding the geology and hydrology of the San Luis Valley and the impact of the Applicant's proposed ground water withdrawals on natural streams and the vested water rights of others. It is also necessary for the Court to make findings regarding the accuracy

and reliability of predictions made by the two computer models received in evidence.

A. GENERAL GEOLOGIC STRUCTURE OF THE VALLEY

50. The San Luis Valley is a north-south trending valley located in south-central Colorado. The Valley is approximately 100 miles long and 50 miles wide, and is bounded on the west by the San Juan Mountains and on the east by the Sangre de Cristo Mountains. It is part of a series of valleys created by the Rio Grande Rift, a major tensional rift which extends from northern New Mexico to just south of Leadville, Colorado.

51. There are three major north-south trending structural features underlying the San Luis Valley. West to east, these have been termed the Monte Vista graben in the western portion of the Valley, the Alamosa horst in the center, and the Baca graben in the east. Horsts and grabens are blocks cut from the crust of the earth by faults. A horst is relatively uplifted block; a graben is relatively downthrown block. The general configuration and location of these features is shown on Applicant's Exhibit 99 and on Objectors' Exhibit US 74, as well as other documents and reports admitted into evidence. These horst and graben structures form the pre-cambrian basement of the San Luis Valley.

52. Overlying the precambrian basement of the Valley are a series of sedimentary and volcanic deposits which are several thousands of feet thick. As a general matter, the Court need only concern itself with the upper sedimentary formations referred to as the unconfined

alluvial aquifer, the Alamosa formation and the Santa Fe group which is comprised of the Santa Fe and Los Pinos formations. The parties agree that, with the possible exception of formations on the very western edge of the Valley, whatever water is capable of being economically developed can only come from these formations.

53. The parties agree that the primary source of depositional materials which have filled the Valley and covered the horst and graben features was the San Juan Mountains. The Sangre de Cristo Mountains have also contributed a significant amount of sediment on the eastern edge of the Valley, but only within a few miles of the mountain front.

54. The depth of the sedimentary deposits in the San Luis Valley is deepest over the Baca graben. This reflects the fact that tectonic activity has been more significant in the eastern half of the Valley, creating a deeper graben which has filled with sediments.

55. The surface materials of the Valley comprise the unconfined aquifer, a layer of sediments composed largely of near surface alluvial sands, gravels and clays which have coalesced over periods of several thousands of years from the streams which deposit materials onto the Valley floor. The source of these materials is the mountains to the west, north and east. These materials are coarse and are characterized by relatively high hydraulic conductivities. Water quality in the unconfined aquifer is good, and the majority of the irrigation wells in the San Luis Valley are completed in this aquifer.

56. Beneath the unconfined aquifer deposits is the Alamosa formation. The Alamosa formation ranges in

thickness from zero at the western edge of the Valley to in excess of 1,200 feet in the Baca graben. The sediments in the Alamosa formation are coarser to the western side of the Valley and become finer as one moves east, becoming predominantly clays with interbedded sands and silty clays in the Baca graben area. At the time that the Alamosa formation was laid down, playa lakes formed in the central San Luis Valley and in the Baca graben which was the deepest portion of the Valley. These lakes resulted in the deposition of lacustrine "blue" clays interbedded with poorly cemented silty sands. These "blue" clays, which are commonly referred to as the "blue clay series," occur over much of the Valley to within 2-3 miles of the Sangre de Cristo mountain front, and form the confining sequence which separates the confined and unconfined aquifers. The parties agree that the clay layers are thicker and more impermeable in the eastern portion of the Valley. These confining clays create an aquitard which impedes the upward movement of water through the Alamosa formation into the unconfined aquifer and, as a result, create the artesian conditions found in the confined aquifer. There is a hydraulic connection between the confined and unconfined aquifers, but the amount and location of water movement between the two is not well understood and varies by location.

57. The top of the blue clay series lies at a depth ranging from 35 feet on the western side of the Valley to approximately 125 feet on the eastern side of the Valley. The approximate limits of the blue clay series are shown on Plate 2 of Water Resources Circular 18, Applicant's Exhibit 30, and on the Isopach Map of the Blue Clay

Series prepared by the State Engineer's Office, Applicant's Exhibit 90.

58. The unconfined aquifer and the confined aquifer, although hydraulically connected at various points, have different hydrologic properties and generally act as two separate hydrologic units. They have long been treated as separate units by the Colorado State Engineer when granting or denying well permits. The water rights within these aquifers have been separately administered by State water officials for at least 30 years. The Applicant's effort to treat the two aquifers as a single aquifer is not based in fact and will not be adopted by the Court.

59. Beneath the Alamosa formation is the Santa Fe Group. To the west it is comprised of what is known as the Los Pinos formation. In its western reach, the Los Pinos formation is characterized by coarse, loose, unconsolidated gravels with high hydraulic conductivity, indicating closer proximity to the principal source of sediment. As one moves east across the Los Pinos and into the Santa Fe, and the distance from the source increases, the sediments become more fine-grained.

60. The evidence established that near the foot of the Sangre de Cristo Mountains, the dominant depositional source in both the Alamosa and Santa Fe formations changes to the Sangre de Cristo Mountains, In this area, the sediments lose their bedded nature, and the blue clay series does not exist.

61. The unconfined aquifer receives water from various streams that flow into the Closed Basin area, irrigation return flows, ground water recharge facilities deriving water from the Rio Grande and Closed Basin

streams, and return flows that result from irrigation water pumped from the confined aquifer. The unconfined aquifer also receives unquantified but apparently small amounts of recharge from precipitation and upward leakage through the confining clay series from the confined aquifer.

62. The confined aquifer is primarily recharged at the edges of the Valley. As inflow enters the Valley from the surrounding mountains, water is recharged to the aquifer through the alluvial fans, fractures in volcanoclastic formations and deep percolation through the coarser sediments at the Valley edges where the confining blue clay series is absent. The source of this water is principally leakage from streams passing over these coarse sediments at the Valley's edges. There are those who claim that the confined aquifer receives significant deep ground water inflow from the surrounding mountains, particularly from the San Juans. There is a wide range of opinions as to the quantity of inflow to the confined aquifer from the San Juans, ranging from approximately 485,000 acre-feet per year according to Dr. Huntley's thesis, Applicant's Exhibit 40, to 10,000 to 30,000 acre-feet per year according to the testimony of Mr. Philip Emery, the principal investigator for the extensive studies of the San Luis Valley carried out by the U.S.G.S. in the late 1960's and early 1970's.

63. While the surface inflow appears to have been fairly thoroughly investigated, the Court concludes the evidence presented about the amount of ground water inflow recharging the confined and unconfined aquifers is, at best, an educated guess. The quantification of this

ground water inflow has previously been made by construction of water budgets to balance assumed inflows and outflows. Ground water inflow from the San Juan Mountains has been used as a balancing term to provide an additional source of inflow to counter-balance assumed outflows. An example of the type of variance that can occur in assumptions about ground water inflow in water budgets is well-illustrated by Applicant's Exhibit 76. There the inflow estimates vary from zero acre-feet per year to 721,000 acre-feet per year. From this it can readily be seen that the assumptions made about one or more components in a water budget can drive, or be driven by, the quantities chosen for other components of the water budget.

64. The limited evidence available regarding the existence of ground water inflow into the valley fill sediments is inconsistent with large quantities of ground water inflow. The available evidence on water quality and water circulation in the confined aquifer suggests that the water in the confined aquifer, particularly at depth, has not been moving. The absence of movement of this ground water is inconsistent with any substantial quantities of deep ground water inflow from the San Juan Mountains. The Court finds that the methodology used by Mr. Huntley to arrive at the estimates in his thesis, and the values adopted by Messrs. Hearne and Dewey in their report, Water Resources Investigation Report 86-4113, Hydrologic Analysis of the Rio Grande Basin North of Embudo, New Mexico, Colorado and New Mexico, 1988, ("WRI 86-4113"), Applicant's Exhibit 42, and their respective estimates of this ground water inflow from the San

Juans are simply not sufficiently reliable to be given credence by the Court.

B. ROLE OF FAULTING IN THE SAN LUIS VALLEY'S HYDROLOGY

65. Faulting is extensive and complex throughout the San Luis Valley. Significant faulting is present in both the Monte Vista and Baca grabens. The faulting is due in large part to the tensional system of the Rio Grande Rift. As the rift expands in an east-west direction, it relieves horizontal stresses on the rocks, and the vertical stress of gravity becomes the driving force. As a result, units of material are displaced downward relative to other units, creating what are called "normal" faults.

66. As faulting was occurring in the Valley, deposition of sediment was also occurring. As a result, units of sediment were deposited over a displacement caused by faulting. At some later time, the fault moved again resulting in further displacement, followed by deposition of more sediments, further movement of the fault, further deposition of sediments, and so on. The faults created by this process of nature are known as "growth faults." Within a growth fault, the displacement between fault blocks increases with depth, or conversely, decreases as one approaches the surface.

67. The evidence indicated that although displacement of some of these growth faults penetrates into the blue clay series, and perhaps even to the surface at some limited locations, many others end below the confining clays. This occurs as movement on the fault ceases and

sedimentation fills the downdrop side and the overlying sediment beds are laid down without displacement.

68. "Normal" faulting in the San Luis Valley does not occur in a 90 degree vertical plane. This is apparent on the various seismic lines introduced by the parties. As a result, in the faulting process, one side of the broken rock unit slides over the other side. This plane of movement, together with the rock on either side of the plane which is fractured in this process, was referred to by experts of all parties as a fault zone. Fault zones are associated with the faulting that historically occurred in the San Luis Valley.

69. As rock units grind against each other in the faulting process, gouge material can be created. Gouge or fault smear, as it is sometimes called, is the fine-grained material created when rock grinds against rock as movement occurs along a fault, or may be the fine-grained particles of clay comprising the rock itself. This material may fill the space in a fault which is created by the movement of the rocks. Clay materials are more likely to smear or to form gouge than harder, more lithified or indurated (rock-like) materials.

70. Fracturing or faulting of rock may either enhance or inhibit movement of water or other fluids along the fault plane and within the fracture zone. The evidence indicated that both circumstances occur in the San Luis Valley. Where gouge has been created in a fault zone, it can act to decrease permeability and inhibit the flow of water within or through that fault zone. Faulting can enhance the potential for water movement by creating areas of increased permeability. Where faulting

enhances the flow of water, the vertical flow of water is enhanced only within the fracture zone.

71. The Applicant's principal expert on the nature and location of faults in the San Luis Valley was Dr. John Everett. He was commissioned to study faults in the Valley with particular focus on the faults in the eastern and northern portions of the Baca graben near the Applicant's property. As a consequence, he had not investigated and was not able to testify about the location and extent of faults in the Monte Vista graben, although he conceded that faults must and do exist there and have the same properties as those in the Baca graben. The Applicant's expert, Mr. Robert Brogden, relied upon Dr. Everett for the location of faults in the San Luis Valley.

72. Dr. Everett described the fracture zones associated with faults in the Valley as being a few feet to tens of feet wide, with a few zones being perhaps a hundred or more feet wide. This testimony is corroborated by the Applicant's expert, Mr. Townsend. Dr. Everett also testified that the area of the Valley is very large compared to the area occupied by the fracture systems. It was his opinion that within a fault zone or band, the fault's ability to move water vertically, as measured by its vertical conductivity, is enhanced only 4 to 10 times over that of the unfaulted surrounding materials. In other words, the amount of flow potentially moving upward through a fault or fracture zone, is only 4 to 10 times greater than the amount of flow that could move up through the same material in the absence of any faults or fracture zone.

73. Mr. Brogden was the Applicant's principal expert witness on the geology and hydrology of the San

Luis Valley and the alleged nontributary nature of the ground water claimed. A portion of his testimony concerned his interpretation of the hydrologic significance of faults and fracture zones in the San Luis Valley. According to Mr. Brogden, the fault and fracture zone having the most hydrologic significance is located in that area of the Baca graben where the confining clay series is present. *See* Applicant's Exhibit 143. This area is very near Applicant's property and exceeds 200 square miles in area as depicted by Mr. Brogden. Mr. Brogden testified that in his opinion the same faulting described by Dr. Everett enhances average vertical conductivity 100-fold *everywhere* within that 200 square mile area even though the actual area occupied by the fault and fracture zones is only a small fraction of that area. It was Mr. Brogden's opinion that these faults and fracture zones operated to bring ground water from the confined aquifer, deep in the Baca graben, to the upper portions of the confined aquifer and unconfined aquifer. This testimony is fundamentally at odds with the opinions of the Applicant's other experts Dr. Everett and Mr. Townsend.

74. Mr. Brogden's assertion does not find any rational or credible support in the record. The testimony of Applicant's own witness, Dr. Everett, as well as the testimony of Objectors' expert, Mr. Harmon, regarding the relative degree of water movement in faults, together with the testimony of the Applicant's witnesses, Dr. Everett and Mr. Townsend, regarding the valley-wide distribution of faulting are completely inconsistent with Mr. Brogden's opinions regarding the role of faults in moving water into the upper portions of the confined aquifer and into the unconfined aquifer. According to the

calculation made by the Objectors' expert, Dr. Sharma, for the actual faults to have the effect ascribed to them by Mr. Brogden, they would have to have a vertical conductivity some 100,000 to a million times greater than the surrounding materials. The Court finds Mr. Brogden's opinion to be without basis in fact.

75. Mr. Brogden also relied upon paired hydrographs from wells allegedly completed into the confined aquifer and unconfined aquifer to support his opinion of the role of faults. He asserted that the similar pattern of fluctuations in the hydrographs showed the movement of water from the confined aquifer to the unconfined aquifer through the fault and fracture zones. This evidence was not persuasive. The virtually identical water levels in the paired wells appear to indicate only that both wells are completed into the unconfined aquifer. If in fact these hydrographs were to be accepted for the proposition advanced by Mr. Brogden, the characteristics ascribed to the faults by Mr. Brogden would have effectively eliminated the confining nature of the blue clays in the fault area on the Valley floor near the Applicant's Baca property. This would result in the elimination of artesian pressure in this area. However, Mr. Brogden's own testimony verifies that there is in fact artesian pressure in the confined aquifer in the area of the paired hydrographs as demonstrated by flowing confined aquifer wells.

76. Mr. Brogden also relied for his conclusions on a series of so-called "leaky artesian curves" resulting from the test pumping of wells in the unconfined aquifer. Applicant's Exhibits 146 through 166. He was of the opinion that certain test pump results from unconfined aquifer wells in the alleged faulted area on the Valley

floor north of the Rio Grande show evidence of leakage that he attributed to the existence of faults.

77. This analysis compares the actual drawdown curve observed from the pump test of a well to the idealized Theis drawdown curve. *See* Objectors' Exhibits RG 68 and RG 69. These deviations are said to be indicative of leakage from an underlying aquifer. Based on the testimony presented at trial, the types of departures from the idealized Theis curve shown on these exhibits can be explained by a number of different factors, including delayed drainage from the unconfined aquifer. Given the interbedded characteristics of the unconfined aquifer, it is more probable that the deviations in the curves are principally a function of delayed drainage, or perhaps a combination of both delayed drainage and upward leakage from the confined aquifer. However, both of these conditions can exist without the presence of faults. The Court finds this evidence to be unpersuasive on the existence of faults as conduits for ground water flow.

78. The evidence presented by the Objector's expert, Mr. Harmon, and the Applicant's rebuttal expert, Ms. Gries, as well as some of the many reports submitted into evidence by the Applicant, show that water quality substantially decreases with depth in the San Luis Valley. The only evidence presented established that 2,000 to 3,000 feet below land surface there is a substantial amount of total dissolved solids ("TDS"), and at about 5,400 feet below land surface a TDS concentration of 10,000 parts per million was encountered in an oil and gas test well. This high level of TDS indicates very long retention time for water in the confined aquifer. This is

further evidence that faulting does not produce significant water movement in the confined aquifer as suggested by Mr. Brogden. No evidence of water quality degradation in the shallower portions of the confined aquifer was presented to substantiate the upward movement of poor quality water from depth in the quantities suggested by Mr. Brogden.

79. There is no credible basis in the evidence for assigning a large hydrologic role to fault and fracture zones in sediments underlying the Valley floor, or for the use of an inflated vertical hydraulic conductivity in these fault and fracture zone areas. The Court finds, based on the evidence presented, that faulting has little or no effect on vertical hydraulic conductivities in all or a significant portion of the sediments underlying the Valley floor, and there is no sound basis for modeling 200 square miles of enhanced vertical hydraulic conductivity, as has been done by Mr. Brogden. In fact, the Applicant's testimony regarding sensitivity runs of its computer ground water model demonstrated that if realistic vertical hydraulic conductivities had been used by it in the fault and fracture zones, the Applicant's own model would show that its proposed pumping would deplete the Rio Grande and other natural surface streams in an amount greater than 1/10th of one percent of the amount withdrawn annually by the 100th year.

C. RIVERS AND STREAMS

80. There are three principal drainage basins located in the San Luis Valley. The largest is the drainage basin of the Rio Grande above its confluence with the

Conejos River near La Sauces. The Rio Grande drains a substantial portion of the San Juan Mountains in Hinsdale, Mineral, Rio Grande and Saguache Counties in Water Division No. 3. The Rio Grande enters the Valley floor near the Town of Del Norte and then flows generally south and east near the Cities of Monte Vista and Alamosa. At Alamosa, it turns south, passes through the San Luis Hills and continues south into the State of New Mexico. The Rio Grande has a number of tributaries which join it on the Valley floor including the Alamosa River, La Jara Creek, Trinchera Creek and Culebra Creek.

81. The second principal drainage basin in the San Luis Valley is the Conejos River basin. The Conejos River basin, like the Rio Grande, drains a substantial portion of the San Juan Mountains. The principal tributaries of the Conejos River are the Los Pinos and San Antonio. The Conejos River joins the Rio Grande at La Sauces and the waters it contributes to the Rio Grande flow south into New Mexico.

82. The third principal drainage is north of the Rio Grande in an area known as the Closed Basin. The Closed Basin is distinguished from the remainder of the Valley by a low topographic divide and a ground water or "hydraulic" divide. The approximate boundaries of the Closed Basin are shown on Plate 1 of Water Resources Circular 18, Applicant's Exhibit 29. The effect of both the topographic divide and the ground water divide is that water entering the Closed Basin does not flow, either on the surface or in the unconfined aquifer, to the Rio Grande. The Closed Basin is the natural drainage for a portion of the San Juan Mountains on the west and north and the Sangre de Cristo Mountains on the east.

Numerous streams come off these mountains and supply water to the Closed Basin and to the unconfined and confined aquifers. The two principal drainages located within the Closed Basin area are Saguache Creek and San Luis Creek. The Closed Basin also receives a substantial supply of water imported by ditches and canals from the Rio Grande. Also located within the Closed Basin area is the U.S. Bureau of Reclamation's Closed Basin Project, the Great Sand Dunes National Monument, and the Blanca Wildlife Habitat Area.

83. The waters of both the Rio Grande and the Conejos River are subject to the Rio Grande Compact. The water rights on those streams are administered annually to insure compliance with Colorado's obligation under the Compact.

84. Based upon the evidence presented, as discussed below, the Court finds that the Rio Grande, Conejos River, Alamosa River, La Jara Creek, Trinchera Creek, Saguache Creek, San Luis Creek and their tributaries are all natural streams with defined channels, alluvium and underflow. The Court also finds that the ground water in the sands, gravels and clays of the unconfined aquifer of the San Luis Valley, including the Closed Basin, and the ground water hydraulically connected to the unconfined aquifer are tributary to the alluvium of the natural streams in the Valley. The Court further finds that the unconfined aquifer in the San Luis Valley is in direct hydraulic connection with the alluvium and surface flows of the natural streams of the Valley. The Court also finds that the withdrawal of ground water proposed by the

Applicant will influence the rate and direction of flow of ground water in the unconfined aquifer, in the alluvial aquifers of natural streams in the Valley and the surface flows of those natural streams.

85. The surface streams entering the Closed Basin and their associated ground water flow toward the eastern side of the San Luis Valley where they collect in an area referred to by many witnesses as the "sump." The sump is defined as the lowest point in the Closed Basin and is located at or near San Luis Lake. The waters reaching the sump have historically been discharged by evaporation and evapotranspiration.

86. A portion of the waters flowing into the San Luis Valley enter the confined aquifer along the Valley margins, maintaining the artesian head in the confined aquifer. A reduction in the quantity of water within the confined aquifer caused by increased pumping, as proposed by the Applicant, will result in increased recharge along the Valley margin, resulting in less water entering the unconfined aquifer and depletions to the flow of the streams of the San Luis Valley.

87. Throughout the San Luis Valley, both within and outside the Closed Basin, the rivers and streams constitute natural streams, as the term is used in the Colorado law. Without exception, these streams have defined channels as they issue from the mountains and cross the Valley floor. In the Closed Basin region, those defined stream channels generally continue across the Valley floor. In some locations, the stream channels are braided as the streambed gradient flattens, but a defined course

of flow is nonetheless evident. In other cases, the activities of man have resulted in the modification of the natural stream channel due to construction of irrigation works or other changes, but the flow in the streams continues down the modified channels and toward San Luis Lake.

88. The evidence adduced from the Applicant's witness, Dr. Everett, and shown by his photographic exhibits, clearly depicts the existence of the defined stream channels for the Closed Basin streams. In addition, the color-infrared photography and Dr. Everett's testimony identified the existence of alluvial channels associated with the surface channels of those streams. These facts were likewise established by Objectors' witnesses, Messrs. Davey and Boddie, and the Division Engineer, Mr. Vandiver. The Court finds that the testimony of these individuals and the investigations they made are credible and establish the existence of these natural streams from their point of issuance at the mountain front across the Valley floor to the sump of the Closed Basin at San Luis Lake. The Court further finds that the interpretation of the physical fact by the Applicant's expert, Mr. Brogden, and his denial of the existence of such natural streams and their alluvium were not credible or reliable. The great weight of the evidence adduced in this proceeding establishes the existence of an alluvial channel associated with all of the streams in the San Luis Valley, including those with intermittent flow.

89. The streams in the San Luis Valley are subject to an annual hydrologic cycle. In the spring and early summer the streams are full of water from the melting snow. The flows gradually diminish and by the fall, portions of

some surface streams become dewatered. This phenomenon does not mean that the streams' alluvium is similarly dewatered. Simply because a stream does not have a permanent flow on the surface does not mean it is not a natural stream and cannot be impacted by ground water withdrawals.

90. Flows in the channels of the intermittent streams in the Closed Basin area depend upon snow melt, runoff and precipitation and upon the level of use of vested water rights diverting from the streams. In high water years when the precipitation and runoff are above average, the streams on the floor of the San Luis Valley tend to flood out of their channels. The ground water system becomes full and water flows across large areas of the sump of the San Luis Valley. Based on the testimony of Messrs. Davey, Vandiver and others, the Court finds that in years of high runoff the vast majority of these Closed Basin streams have a continuous flow in defined channels from the mountains and across the Valley floor, and that those waters make their way to San Luis Lake.

91. The Court finds to be unreliable Mr. Brogden's assertion that water appearing in the stream channels on the Valley floor and within the sump of the San Luis Valley is simply a surface expression of ground water and that it is not related to streamflow. Based on the testimony of Messrs. Vandiver, Davey and others, the Court finds that the ground water in fact rises as a result of increased streamflows into the Valley during the runoff season and that there is in fact a correlation between the streamflows and the rise in ground water levels. The Court further finds that it is the annual rise in the ground

water table which permits the streams to fill their channels to a greater and greater extent, to flow across the floor of the Valley and eventually reach San Luis Lake; it is this mechanism which allows the streams to deliver water to the headgates of surface water rights on the floor of the Valley and to fill the storage rights held by the Division of Wildlife and others in Head and San Luis Lakes.

92. The Applicant contends that by 1980, there had been a break in the hydraulic connection between the Rio Grande and the underlying aquifer from Del Norte to east of Monte Vista, at Alamosa, and at the confluence of Trinchera Creek. The Court finds that the ground water measurements and observations made by Mr. Davey and the seepage runs undertaken and observations made by the Division Engineer are more thorough and persuasive than the limited field work performed by Applicant's engineers. The Court therefore finds that the Rio Grande from Del Norte to the state line is in hydraulic connection with the underlying ground water during all or a portion of each year. The Court further finds that there are circumstances in which the Rio Grande may temporarily break hydraulic connection with the ground water table near Del Norte, but that the connection is naturally reestablished.

93. The Court finds that the ground water in the unconfined aquifer is in hydraulic connection with most surface streams in the San Luis Valley and their alluvium for all or portions of most years. Further, the evidence showed, and the Court finds that the hydraulic connection between the unconfined aquifer and the surface streams affects the rate of leakage from the streams.

Where the water table is above the stream, the gradient is from the water table to the stream, and the stream gains. Where the water table is at or somewhat below the water level in the stream, a "mounded" water table occurs connecting the stream and the aquifer. The gradient between the stream and the aquifer in this situation is less than the maximum gradient that would exist if the stream and aquifer were hydraulically disconnected. As a result the stream is "losing", but at less than the maximum rate of loss. The unconfined aquifer, and the hydraulic connection between that aquifer and the streams influences the rate of loss (or gain) through any particular stream reach, and therefore the rate and direction of flow in those streams.

94. The Applicant contends, based upon limited field investigations, that except for short reaches of San Luis Creek and Saguache Creek, none of the streams entering the Closed Basin are in hydraulic connection with the unconfined aquifer. These limited investigations included estimates of water levels and streambed depths from U.S.G.S. quad maps and other published data, and limited field checking of streamflow conditions and water levels. This contrasts markedly with the extensive field work conducted by Objectors' witnesses, Messrs. Davey and Boddie, and Dr. Cooper and the Division Engineer. Their work included seepage runs on creeks and streams, surveying stream water levels and comparing those with actual surveyed and measured ground water levels, the installation of numerous monitoring wells, and many days of field work and observations. Based upon the evidence presented, the Court finds that for all or part of their length the following natural streams and their

alluvium are in hydraulic connection with the unconfined aquifer in the Closed Basin of the San Luis Valley: San Luis Creek, Saguache Creek, Big Spring Creek, Sand Creek, Medano Creek, Cottonwood Creek, Crestone Creek, Kerber Creek, Rio Alto Creek, San Isobel Creek, Deadman Creek, Carnero Creek, LaGarita Creek, Russell Creek, Werner Arroyo, and Spring Creek Branch of San Luis Creek (also known as Rock Creek). This listing is *not* intended to be exclusive.

95. San Luis Lake and Head Lake are naturally occurring lakes which obtain their source of supply from surface flows of San Luis Creek and its tributaries, including Saguache Creek and its tributaries, as well as surface flows of Sand Creek and Big Spring Creek, together with the alluvial underflow of those streams and ground water within the unconfined aquifer of the Closed Basin.

96. One of the natural streams near the Applicant's Baca property is Big Spring Creek. The uncontroverted evidence established that Big Spring Creek is a gaining stream on a year-round basis from its source at Indian Springs at least to the point where the Ojos Ditch, the furthest upstream headgate, is located. Through that 3-1/2 mile gaining reach, the only source of water to the creek is spring flow from the unconfined aquifer. The evidence further shows that during all or portions of the year, Big Spring Creek is a gaining stream throughout its entire reach. Big Spring Creek flows as far as Head and San Luis Lakes where it terminates. Big Spring Creek, together with the return flows from irrigation, provide an actual and decreed source of supply for the water storage

rights in Head and San Luis Lakes. *See Medano Ditch Co. v. Adams*, 29 Colo. 317, 68 P. 431 (1902).

97. Being the sole source of water to the upper portion of Big Spring Creek, the unconfined aquifer obviously influences the rate and direction of flow of the Creek. The Court therefore finds that the unconfined aquifer is in hydraulic connection with Big Spring Creek and its alluvium, and that the aquifer is tributary to Big Spring Creek.[4]

98. Gain/loss studies performed by the Division Engineer's staff show that the flow in Big Spring Creek is on the order of 5-6 c.f.s. even in the drier portions of the year. Diversion records for the Ojos Ditch indicate that diversions from Big Spring Creek during the irrigation season range up to 3,000 acre-feet per year, with most years recording over 1,000 acre-feet of diversions.

99. The Applicant did no field work to investigate Big Spring Creek, but was provided with at least one gain/loss study showing Big Spring to be a gaining stream. However, the Applicant did not analyze the depletions or impacts of its projected drawdowns on Big Spring Creek because its engineers considered Big Spring Creek to be a losing stream not in hydraulic connection with the unconfined aquifer. The Applicant did not ever look at the impacts on water rights diverting from Big Spring Creek, including the water storage rights of the

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[4] As an historical note, in 1902 the Colorado Supreme Court affirmed the trial court's finding that the waters of Big Spring Creek were in hydraulic connection with the ground water. *Medano Ditch Co. v. Adams, supra.*

Division of Wildlife and others in Head and San Luis Lakes.

100. The drawdowns in the unconfined aquifer under Big Spring Creek, as projected by the Applicant's own model and shown on Applicant's Exhibit 266, range from 25 to 75 feet. The drawdowns predicted by the State's model are about 32 feet. The uncontroverted testimony of Mr. Boddie was that such a reduction in the ground water table would cause the upper portions of Big Spring Creek above the Ojos Ditch to cease flowing. Based on the only evidence presented, the depletions to Big Spring Creek would be approximately 3,600 acre-feet per year, well in excess of the 1/10th of one percent of pumping required to find the water claimed by the Applicant to be nontributary. The Applicant made no credible effort to rebut Mr. Boddie's testimony on this point. The Court finds the evidence to clearly show that the ground water which Applicant proposes to pump is tributary to Big Spring Creek.

D. CLOSED BASIN PROJECT

101. Water entering the Closed Basin not consumed by irrigation or by naturally occurring vegetation flows either on the surface or underground to the topographic low in the Closed Basin near Head Lake and San Luis Lake. At that point the water was historically discharged by evapotranspiration from open water surface and the soil, or by the native plant life.

102. Over the recent history of the San Luis Valley, there have been a number of proposals for capturing this

water that was otherwise lost to evaporation and transpiration and delivering it to the Rio Grande. This possibility is reflected in Article VIII of the Rio Grande Compact, §37-66-101, C.R.S., signed in 1938, and is discussed generally in the report "Ground-Water Resources of the San Luis Valley, Colorado," by William J. Powell, prepared by the Colorado Water Conservation Board, the U.S. Geological Survey and the United States Bureau of Reclamation, dated June, 1958, and admitted as Applicant's Exhibit 25. *See also Closed Basin Landowners Ass'n v. Rio Grande Water Conservation Dist.*, 734 P.2d 627 (Colo. 1987).

103. In 1972 the United States Congress authorized the construction of the Closed Basin Unit of the San Luis Valley Project. P.L. 92-514, as amended. The goal of the Closed Basin Project is to lower the water levels in the unconfined aquifer within the Project area by the construction of a large number of shallow wells, and thereby reduce the amount of water lost to evaporation and transpiration. This lowering of the water table is carefully monitored and subject to a variety of mitigation requirements. The water diverted is delivered to the Rio Grande for the purposes authorized by Congress, including aiding the State of Colorado in meeting its delivery obligations under the Rio Grande Compact.

104. The Closed Basin Project, decreed by this Court in Case No. W-3038, is entitled to divert 117,000 acre-feet annually of tributary ground water from the unconfined aquifer of the Closed Basin. The source of supply for the Closed Basin Project is ground water inflow into the Project area, as well as surface water inflow down San Luis Creek and its tributaries, Big Spring Creek and Sand

Creek. In addition, the Project receives surface water flows from time to time entering the Project area through various lateral ditches and drains emanating from the agricultural area to the west of the Closed Basin Project. In addition, the Closed Basin Project receives water supply from ground water moving into the Project area from the north, east and west. The exhibits introduced by the Applicant and the Objectors display ground water contours which establish that the ground water moves into the Closed Basin Project area, and the Court finds that the evidence introduced at trial confirms that the Closed Basin water supply is dependent upon both ground water and surface water flows into the Project area.

105. Testimony at trial proved that even under the projections of the Applicant's computer model, Applicant's proposed ground water withdrawals would decrease the yield under the Closed Basin Project in excess of 38,000 acre-feet annually. The actual impacts could be far greater.

106. The Applicant spent a great deal of time at trial attempting to justify its project by a comparison to the alleged impacts of the Closed Basin Project. The Comparison is inappropriate. The Closed Basin Project was authorized by Congress after extensive study by several federal agencies, including the U.S. Bureau of Reclamation and U.S. Fish & Wildlife Service. The impacts of the Closed Basin Project were considered at that time; the Project's design took those impacts into consideration; and the authorizing legislation contains terms and conditions in order to insure that the Project is operated in the manner contemplated by Congress. Impacts from the Closed Basin Project were considered at the time the Project was

authorized and at the time the Project water right was decreed by this Court. The appropriate terms, conditions and protective measures were agreed upon and are being implemented. The Closed Basin Project is nearing completion and its water rights must be recognized by this Court and are relevant to the determination of the nature of the water sought by the Applicant and injury to other vested water rights and decreed conditional water rights.

107. The flows of San Luis Creek and its tributaries, Saguache Creek and its tributaries, Sand and Big Spring Creeks, all contribute to the water supply available to the Closed Basin Project and to the mitigation features of the Project, including Head and San Luis Lakes, and the wetlands established and maintained by the Colorado Division of Wildlife in the vicinity of Head and San Luis Lakes. Diminution in flows of any of those streams or their tributaries will result in injury to the water rights of the Closed Basin Project and its mitigation features, as well as the storage rights for Head and San Luis Lakes.

E. FEDERAL RESERVED WATER RIGHTS

108. The Great Sand Dunes National Monument (hereinafter "Monument") was established, pursuant to the Antiquities Act, 16 U.S.C. S 431, by Presidential Proclamation on March 17, 1932, 47 Stat. In this Court's Case No. 81CW164, the United States of America claimed reserved rights in certain waters in, on, under, adjacent to, or otherwise appurtenant to the land described by the Proclamations which created the Monument.

109. The primary purpose of the Monument, as recognized by this Court in the decree in Case No. 81CW164,

is preservation of the great sand dunes and additional objects of scenic, scientific, and educational interest. Certain creeks flowing through the Monument, including Medano, Sand and Castle Creeks, exhibit a rare phenomenon known as "pulsating" or "surge flow." This Court has previously recognized that this phenomenon is of scientific, educational and scenic interest.

110. Instream flows in the amounts necessary to preserve the great sand dunes, the pulsating flows and additional objects of scenic, scientific and educational interest were decreed to the United States by decree of this Court dated June 30, 1989, in Case No. 81CW164.

111. This Court has also decreed reserved water rights for numerous springs located on public land administered by the Bureau of Land Management, pursuant to Public Water Reserve No. 107, April 17, 1926. *United States v. City and County of Denver*, 656 P.2d 1, 31 (1982). Case Nos. 81CW144 through 147 and 82CW57 and 58. These decrees are for very small amounts of water which the Court found to be necessary for human and animal consumption.

112. In order to enter a decree granting the relief requested by the Applicant, this Court must determine, *inter alia*, that Applicant's pumping will not materially injure any other vested water right. The Court notes that pursuant to §§37-90-102(2), 37-90-137(2) and 37-90-137(4) it is charged with protection of appropriative rights in the natural stream system. This must include a finding that the federal reserved water rights decreed from the natural stream system to the Monument and the Public Water

Reserves will not be materially injured. The Applicant has not met this burden.

113. The persuasive evidence presented at trial demonstrated that at times when Sand Creek is flowing, it is in hydraulic connection with the unconfined aquifer. The evidence presented by the Objectors' witnesses indicated that a mounded water table is created connecting the stream to the regional water table which is within a few feet of the ground surface. A mounded water table is created when the water leaking from a stream builds a "mound" of water on top of the water table. Where the regional water table is sufficiently close to the bottom of the stream, the mound creates a connection between the stream and the unconfined aquifer. These mounded water tables change the gradient between the streambed and the aquifer and decrease the amount of leakage from the stream. On Sand Creek, this allows a smaller amount of inflow to be able to maintain a live surface stream in the Monument. The evidence indicates that the presence of the regional water table within a few feet of the bottom of Sand Creek is important to the maintenance of a live surface flow and, therefore, the pulsating flow in Sand Creek.

114. The scant evidence presented by Applicant to support its claim that Sand Creek is never in connection to the regional aquifer is unpersuasive in the face of the far more extensive field work and direct observations presented by the Objectors' witnesses, Mr. Boddie and Mr. Harmon. The Court finds that Sand Creek is in hydraulic connection with the underlying aquifer during portions of every year.

115. Evidence presented by the Applicant in Exhibit 266 demonstrated that under the drawdowns predicted by its own model, the regional water table would be drawn down between 75 and 150 feet under Sand Creek, and in excess of 25 feet under Medano Creek. Drawdowns predicted by the State Engineer's model are in excess of 32 feet under Sand Creek.

116. Drawdowns of the magnitude predicted by the Applicant's own model, as well as the State Engineers' model, would prevent the creation of a mounded water table connecting Sand Creek and the unconfined aquifer, thus causing greater leakage from the stream and reducing the streamflows. This reduction in streamflow would impact the pulsating flows and other natural processes in Sand Creek and injure the instream flow water rights decreed to the United States.

117. The testimony of William Bellis, an expert in hydrogeology, established that pumping 200,000 acre-feet from the Baca alone or in combination with pumping from Villa Grove would also impact some of the Public Water Reserve Springs. The testimony of Mr. Davey corroborated Mr. Bellis' opinion.

118. The impacts of AWDI's proposed withdrawals on the reserved water rights decreed under the Public Water Reserves, and for the Great Sand Dunes National Monument have not been quantified in numerical terms. However, no such quantification is necessary. The impact that would be caused by the Applicant's proposed ground water withdrawal on the reserved rights of the United States is injury as a matter of law because those rights are quantified as a matter of federal law as only the

amount necessary to fulfill the respective purposes of the reservations. *Cappaert v. United States*, 426 U.S. 128, 141 (1976); *United States v. Denver*, 656 P.2d 1, 20 (Colo. 1982). Based upon the evidence, however, this Court can readily find, as a matter of both federal and Colorado law, that the federal reserved water rights would be materially injured by the Applicant's proposed ground water withdrawals.

F. VILLA GROVE

119. The testimony of Mr. Brogden and Messrs. Davey, Vandiver, and Bellis is in agreement and establishes that the water in the vicinity of Villa Grove is, in fact, tributary ground water and no nontributary water exists at that location. Accordingly, the ground water sought by the Applicant under its Villa Grove property is tributary ground water and no nontributary ground water exists underlying that land.

120. The ground water in the Villa Grove area is in hydraulic connection with the large area of springs located along San Luis Creek and Kerber Creek and their tributaries. The springs are a source of supply for those streams. The Applicant did not address in its model the impact of its proposed pumping on the flow of those springs, but the testimony of Messrs. Bellis and Davey, the Objectors' witnesses, as well as of the Division Engineer, establish that any additional ground water withdrawals in the Villa Grove area would result in diminution of flow or elimination of flow from the springs with resulting injury to the United States' water rights in certain identified springs, as well as to water

users taking their source of supply from San Luis Creek, Rock Creek and Kerber Creek.

121. The Court specifically finds that the ground water in the area around Villa Grove is in hydraulic connection with San Luis Creek and its tributaries, and additional pumping in that area will result in material injury to surface water rights taking their source of supply from those streams.

G. IRRIGATION AND RECHARGE

122. The evidence establishes that irrigation and recharge practices play an important role in hydrology of the San Luis Valley. Annually, substantial quantities of water are diverted from the surface streams and used to supply the vast acreages of farm lands in the San Luis Valley. The streams have high flows in the spring and early summer with greatly diminished flows thereafter. This water supply has proven too erratic for modern agriculture in the San Luis Valley. Accordingly, many farmers use the confined and unconfined aquifers as a supplemental source and, occasionally, as the sole source of water for irrigation. The municipalities of the San Luis Valley are also largely, if not wholly, dependent upon these aquifers for their water supplies.

123. While there is agricultural development throughout the San Luis Valley, the manner of irrigation of these lands varies from location to location. Throughout the Valley, but predominantly in the Closed Basin area, irrigation with center pivot sprinkler systems is common. That area contains over 1,000 center pivot sprinklers. Center pivot sprinkler systems generally irrigate

approximately 130 acres per pivot, although pivots can irrigate far greater acreages if set up to do so.

124. Center pivot irrigation systems can obtain their water supply either by means of wells, from surface supplies or from both. Many of the center pivot irrigation systems, including the majority of those located in the Closed Basin area, obtain their water supply from the unconfined aquifer. Others obtain their water supply from wells tapping the confined aquifer or from ditches and canals carrying surface water.

125. Prior to the extensive use of wells for irrigation, water users in the San Luis Valley were dependent on surface water supplies. As recognized by this Court in Case No. W-3979, Applicant's Exhibit 433, when referring to the Rio Grande Canal's delivery of water into the Closed Basin area:

> 16. Irrigation in this area of the San Luis Valley began with the diversion of water from the Rio Grande through an extensive network of canals. From the earliest days of irrigation the method of subirrigation or "subbing", was practiced by the water users under the Rio Grande Canal. Seibenthal in 1910 described the practice of subirrigation as "universal". Subirrigation was accomplished by allowing water to percolate through the soil until the water table raised to or near the root zone of the crops. By continued diversion of river water and by installation of a series of check dams, the water table was regulated so as to hold the proper level to sustain subirrigation. The porous, sandy soil found in the Closed Basin permitted rapid percolation of water and contributed to the efficiency of the subirrigation practice. (Citations omitted.)

17. The subirrigation practice produced a shallow groundwater aquifer, essentially artificial in nature, developed over a period of years by the infiltration of surface water applied for irrigation. This artificial aquifer is what is now known as the unconfined aquifer. *See Powell* at pages 56-57.

18. The practice of subirrigation was criticized for many years by outside observers. They attributed to it the San Luis Valley's water logging and salinity problems. However, this unique mode of irrigation was highly efficient from the point of view of water users. It eliminated many capital and labor costs. Most importantly, subirrigation allowed water users to make parallel their water supply and the actual demand of growing crops. The necessity for achieving parallel timing stems from the fact that the Rio Grande is a typical western stream in that it has a relatively short period of high flow. Crop demands, however, continue long after the peak flows have passed and water available for direct flow diversion is less than sufficient. Because the practice of subirrigation maintained an underground water reservoir after the peak flows had passed water was available to the crops for an extended period, thus circumventing the water supply timing problems inherent in a western surface irrigation system. So long as sufficient water was available to sustain the practice, the water users held firmly to subirrigation despite criticisms from outsiders.

* * *

22. The advent of center pivot sprinklers once again changed the irrigation practices in

> the Closed Basin. Sprinkler irrigation has increased the yield of crops and represents a more efficient use of water with reduced waste. Water for the sprinklers is most efficiently supplied from wells in the unconfined aquifer, but because these aquifers are not maintained by natural recharge, continuation of sprinkler irrigation is necessarily dependent upon artificial recharge. *See Powell* at pages 51-52. Just as they have in the past, the Rio Grande Canal shareholders have imported water into the Closed Basin from the Rio Grande and used it to recharge underground aquifers, in effect using these aquifers as a storage facility. The stored water is then extracted from the aquifers by means of wells which supply the sprinklers."

Finding, Judgment and Decree at pp. 6-7, Applicant's Exhibit 433.

126. The practice of subirrigation, once prevalent in the San Luis Valley, has greatly declined due to the introduction of center pivot sprinklers. However, the increased use of center pivot sprinklers has enhanced the need to maintain ground water levels. Thus, the water users in the Valley necessarily continue to divert their surface water rights in order to recharge the water so diverted in order to maintain the aquifer upon which they depend for their livelihood. Only by this method of conjunctive use of surface and ground water they are able to assure that there is sufficient water to supply their wells. Aquifer recharge is now the common practice throughout the San Luis Valley and is particularly prevalent in the Closed Basin area. Substantial quantities of water are diverted annually from the Rio Grande and carried north into the Closed Basin area by numerous

ditches and then used for either direct irrigation or aquifer recharge, or both.

127. These practices have been judicially recognized by this Court in Case No. W-3979, the Application for Change of Water Rights of the Rio Grande Canal Water Users Association, Applicant's Exhibit 433, and Case No. W-3980, the Application for Change of Water Rights of the San Luis Valley Irrigation District, Applicant's Exhibit 432. In addition, in Case No. 79CW91, Application for Water Rights of the Rio Grande Water Users Association, this Court decreed a water right for the direct diversion of water from the Rio Grande during the months of November and December, subject to availability under the Rio Grande Compact, to be used for recharge of aquifers underlying ditch systems located both north and south of the Rio Grande. The historic and current practice of subirrigation and aquifer recharge has been a principal factor in maintenance of water levels in the unconfined aquifer system throughout much of the San Luis Valley. It also assists in explaining why ground water levels can decline in times of reduced surface water availability.

128. From the earliest days of irrigation in the San Luis Valley, drainage ditches have been constructed to regulate ground water levels. Historically, drains were used in connection with subirrigation to regulate the level of the water table. At times of great inflow, they were and continue to be used to carry away excess waters. Many drains are the source of supply for decreed water rights. The drains are also commonly used as a means for recharging water into the aquifers of the San Luis Valley.

H. EXISTING AQUIFER CONDITIONS

129. Beginning in approximately 1950, the San Luis Valley entered a prolonged dry period. The streamflow for the Rio Grande near Del Norte dropped substantially below the long-term average for the preceding period of record and stayed well below that average until the early 1980's. Objectors' Exhibit RG 7. As a result of this reduced surface water supply, irrigators began to use wells as a supplemental source of supply. In the late 1960's or early 1970's the State Engineer placed a moratorium on the construction of new wells to withdraw water from the confined aquifer of the San Luis Valley. Accordingly, during the 1970's, coincident with the advent of center pivot sprinkler irrigation systems, there was an increased reliance on ground water from the unconfined aquifer for irrigation. The State Engineer continued to issue well permits for wells withdrawing water from the unconfined aquifer until February, 1981, at which time a moratorium was placed on the issuance of any new well permits for new appropriations from that aquifer because there remained no unappropriated water. *See* §37-90-137(2), C.R.S.

130. The decade of 1970's, like the two preceding decades, was a comparatively dry period for the San Luis Valley, with the driest year of record occurring in 1977. During that time period, coincident with the increased reliance on ground water for irrigation, there was an observed decline in the water table in the unconfined aquifer. This water level decline is reported in U.S.G.S. Hydrologic Atlas No. 683, by Thomas Crouch (the "Crouch Report"). Applicant's Exhibits 37, 38 and 39. The Crouch Report describes water level changes in the

unconfined aquifer in the San Luis Valley and in the Rio Grande drainage in northern New Mexico from December, 1969 through January, 1980.

131. Pursuant to §37-90-103(10.5), C.R.S., the determination of whether ground water is nontributary is to be based upon, *inter alia*, aquifer conditions existing at the time of permit application. To describe these aquifer conditions, the Applicant relies heavily upon the Crouch Report. It asserts that the ground water level declines reported there will continue in the future with only minor variations. Likewise, the Applicant has assumed that the streamflow conditions existing during the period 1970-1979 are representative of a long-term trend that will continue, with only minor variations, in the future.

132. The application in this case was not filed until 1986, the amended application was not filed until August of 1990. The Applicant argues that conditions at the time it filed its application and well permit applications were unusually wet and that the prior period should be used for purposes of determining whether the ground water it seeks is nontributary. *See* §37-90-102 (10.5), C.R.S. The period selected by the Applicant to represent "existing" aquifer conditions is 1970 to 1979.

133. Use of the 1970-1979 time period is central to the Applicant's assertion that the water it seeks to divert is nontributary ground water. The Applicant's claim that the ground water is nontributary is predicated largely upon the assumption that the rates of ground water level declines from 1970-1979 have continued and have caused

a permanent break in the hydraulic connection between the unconfined aquifer and many of the surface streams in the San Luis Valley. The principal streams where the Applicant asserts that existing pumping has broken the hydraulic connection between the surface flow and the underlying alluvial aquifer are much of the Rio Grande, La Jara Creek, Saguache Creek, and San Luis Creek. Applicant's Exhibit 214, Objectors' Exhibits JO 144 and RG 71. The Applicant asserts that once this hydraulic connection was broken, that stream losses reached their maximum rate and further declines in ground water levels will not cause increased stream losses. By assuming these conditions exist and will continue in the future, the Applicant then argues that although its ground water use will cause increased water level declines, those added declines will not cause an increase in stream depletions in an amount in excess of 1/10th of one percent of the amount of water proposed to be withdrawn annually.

134. The relationship of streamflow to the adjacent ground water is largely dependent upon (1) the ability of the streambed to transmit water to or from the surrounding water table, and (2) the gradient between the stream and the water table. The ability of a streambed to transmit water is known as "conductance." The rate of streambed conductance has a direct relationship to the impacts to streamflows that can be caused by pumping within the ground water system. The lower the conductance value for the streambed, the lower the leakage rate and, hence, depletions to streamflows that will be projected to occur as the result of ground water pumping. The higher the conductance value, the greater the impact any particular amount of pumping within the ground water system can

have on the surface flows of the stream. The calculations of streambed conductance or leakance do not consider the potential impacts of ground water pumping on the ground waters moving into the alluvial channel and ground water hydraulically connected thereto.

135. The values for streambed conductance or leakance testified to by various witnesses varied widely and were confusing because the evidence was reported in both gallons per day per foot squared and cubic feet per day. The variance among the witnesses ranged from Mr. Brogden's value of approximately 3 gal/day/ft^2 near Del Norte and 0.02 ft/day (0.15 gal/day/ft^2) at Alamosa to the values testified to by the Division Engineer and Mr. Davey in the range of 10 and 11 gal/day/ft^2, based upon gain/loss studies on the Rio Grande. The literature submitted into evidence by the Applicant and the testimony of the Objectors' witnesses established that stream conductance values in the range of 10 gal/day/ft^2 and greater are reasonable for the Rio Grande in the vicinity of Alamosa and that higher values are appropriate in the reach from Del Norte to Monte Vista.

136. Although there are not measured values for all reaches of the Rio Grande and other streams within the San Luis Valley, the Court finds that the values relied upon by Mr. Brogden and incorporated into the Applicant's computer model are not credible. The rate of leakance claimed by Mr. Brogden for the bed of the Rio Grande at Alamosa is comparable to the leakage rate for an engineered retaining pond lined with compacted clay. His leakance rates are absurdly low in comparison to the observed rates testified to by Mr. Davey and the Division Engineer derived from their field investigations.

137. On rebuttal, Mr. Brogden introduced a U.S.G.S. report, "An Evaluation of the Effect of Groundwater Pumpage on the Infiltration Rate of a Semipervious Streambed," by T.E. Moore and C.T. Jenkins, which detailed various river conductance values observed and measured by the U.S.G.S. in the Arkansas River Basin. Applicant's Exhibit 1046. The values contained in that report were similar to the values used by the Objectors in this case. The Court finds that the report provides an appropriate range to consider for riverbed conductance values in the Rio Grande. As testified to by the Objectors' witnesses, the Arkansas River would have, if anything, lower streambed conductance values than the Rio Grande, given the morphology of the Arkansas River. The Applicant's Exhibit 1046 therefore supports the conductance values testified to by the Objectors' witnesses.

138. The Applicant's witness, Mr. Prickett, did not conduct adequate investigations upon which to provide testimony concerning streambed leakance values. The Court finds Mr. Prickett's testimony on the relationship between the Rio Grande and the Arkansas River Basins to lack credibility and foundation and discounts his testimony.

139. The Applicant's analysis assumes that the impact on streamflows is the only relevant inquiry to determine whether the ground water it seeks is nontributary. Even if that was a proper interpretation of the law, the Court finds that the Applicant's assumptions about aquifer and streamflow conditions are unsupported by the evidence. For purposes of its analysis, the Applicant seeks to ignore the entire period of record to determine what constitutes normal or average streamflows in the

Rio Grande. Rather, the Applicant has looked at various portions of the period of record, principally from 1950 to the present. In each of its analyses, it attempts to show that the period of 1970-1979 represents some form of average or normal condition.

140. There are 100 years of recorded streamflows for the Rio Grande at Del Norte. Those streamflows are depicted in a bar chart on Objectors' Exhibit RG 7. That exhibit also displays the average streamflow at Del Norte for the period of record, the ten-year running average, the 1890-1949 average, and the 1950-1989 average. Use of any of these measures shows the period 1970-1979 to have been a period of low streamflow on the Rio Grande. The period from 1980 onward has been wetter than the 1970's. In 1985 the ten-year running average of streamflows came up to the long-term average and remained above the long-term average through 1989.

141. The Court finds that the Crouch Report, while documenting ground water level declines during a limited period of time, is not reflective of either existing or long-term aquifer conditions in the San Luis Valley. To the contrary, the uncontradicted evidence establishes that the ground water levels selected as the starting point in the Crouch Report were a near record high based on the available records. The evidence also established that by 1986, a substantial portion of the wells measured by Mr. Crouch recovered to or very near their 1969 water levels, eliminating the previously observed declines. Other wells with long-term records throughout the San Luis Valley showed a similar recovery during the mid-1980's. The more complete and reliable evidence presented to the

Court and the most reasonable interpretation of the evidence is that the ground water level declines documented in the Crouch Report were part of a larger cycle of ground water level changes reflective of changes in inflow and recharge and cannot be said to be representative of the long-term conditions to be expected in the unconfined aquifer.

142. Applicant relies on WRI 86-4113 as support for its assumptions that 1970 represents a state of equilibrium in the San Luis Valley. The Applicant also relies upon the report to support other assumptions regarding existing aquifer conditions. The report is part of the Southwest Alluvial Basin Study which is in turn part of the Regional Aquifer System Analysis conducted nationwide by that agency. Necessarily, the report is general in nature and it relies entirely upon existing data available on the public record.

143. The limitations inherent in WRI 86-4113 are identified by the authors. The authors state the computer model which is described in the report does not result in a unique combination of aquifer characteristics and boundary conditions. The authors also state that in order to improve the model's calibration, additional data would be required that has not been collected. They specifically identify the lack of data for calibration of their model in the north and east parts of the Valley. This lack of data was corroborated by Objectors' witness, Dr. Sharma. In addition, the authors state that the reliability of model results in predicting water level declines in the San Luis Valley was limited because of a lack of data in the non-irrigated areas.

144. The Court finds that the reliability of the model in WRI 86-4113 is further brought into question by the assumptions made by the authors which were not supported by the collection of new data. Based upon the information contained in WRI 86-4113, and the evidence presented during the trial, the Court finds that the Applicant has failed to sustain its claim that 1970 was representative of steady-state conditions in the hydrologic system of the San Luis Valley.

145. The Applicant supported its claim that the 1970-1979 period represented average streamflow conditions by reliance on precipitation station records. The Applicant presented evidence about the long-term average precipitation at the Wolf Creek gauging station in the upper Rio Grande and the Alamosa weather station on the Valley floor. Based on these two precipitation stations, the Applicant asserted that the streamflows in the 1970-1979 period were representative of long-term trends. The Division Engineer makes extensive use of precipitation stations throughout the San Luis Valley for purposes of administration of water rights and the Rio Grande Compact. The Division Engineer testified that the Wolf Creek station is one of the wettest precipitation stations in the San Luis Valley and it cannot be considered representative of precipitation throughout the headwaters of the Rio Grande. In addition, the Division Engineer testified that the Alamosa weather station is the station which historically receives the least precipitation of any of the precipitation stations on the Valley floor. Accordingly, the Court finds the evidence relied upon by the Applicant is not probative of basin-wide conditions or existing aquifer conditions.

146. Some portion of the ground water level decline in the unconfined aquifer during the 1970-1979 period is attributable to an increased reliance on ground water for irrigation. However, as the Division Engineer testified, there are a number of other factors at work in the decade of the 1970's which must be considered when evaluating the overall role of well usage in the ground water level declines. One such consideration is the effect that administration of the Rio Grande Compact had on the availability of surface water. As a result of a stipulation between the parties in *Texas v. Colorado*, 391 U.S. 901, 88 S.Ct. 1649, 20 L.Ed.2d 416 (1968), beginning in 1968 surface water rights were administered in Colorado to meet Colorado's delivery obligation under Article III of the Rio Grande Compact each and every year. *See Alamosa-La Jara Water Users Ass'n v. Gould*, 674 P.2d 914, 919 (1983). The effect of this stipulation was to require Colorado to administer surface water rights to insure an over-delivery, rather than risk violation of the stipulation and renewal of the litigation.

147. The Division Engineer explained that another effect of administration under the stipulation was to deprive water users in Colorado of the benefit of the credit and debit provisions in Article VI of the Compact. Those provisions were originally included in the Compact to allow under-deliveries in some years and credit for over-deliveries in others and thereby prevent the need to curtail pre-compact surface water rights in Colorado. As a result of the loss of this flexibility, the Division Engineer testified that during the period of 1968-1985, Colorado over-delivered some 300,000 acre-feet for which

it received no credit. But for operation under the stipulation, that water could have been available for beneficial use in Colorado, including diversion by ditches into the Closed Basin area.

148. The Division Engineer also testified that during the late 1970's and early 1980's, a number of efforts were made to reduce the amount of over-deliveries. These efforts included refinement of the administration of water rights to reduce curtailment and over-deliveries, the institution of out-of-priority storage in pre-compact reservoirs high in the Rio Grande watershed, and increased wintertime diversions of water for recharge purposes. Out-of-priority storage was permitted in upstream pre-compact reservoirs where the water was held for delivery under the Compact and, if not needed to meet Compact obligations, it reverted to water users on the Rio Grande. In addition, in years in which it appeared that the Compact obligation would be met, the Division Engineer permitted ditches on the Rio Grande to divert water during the months of November and December for aquifer recharge purposes. Each of the practices helped reduce over-deliveries and increase the amount of water available for use in Colorado.

149. In 1985, Elephant Butte Reservoir spilled, thus eliminating Colorado's debt under the Rio Grande Compact. This led to the dismissal of the stayed Supreme Court litigation in *Texas v. Colorado*, and restored Colorado's ability to use the debit and credit provisions of Article VI of the Compact. As explained by the Division Engineer, now in years when there is an over-delivery of water, credit is received and in years of under-delivery, a debit is accrued, all without the need to harshly curtail

water rights in Colorado. This flexibility increases the amount of water available for diversion to beneficial use in Colorado. In addition, in the late 1980's the Closed Basin Project began production. Water from the Closed Basin Project is made available to both the Rio Grande and Conejos River and is used to satisfy the Compact obligations of the respective streams. The Closed Basin Project is authorized to produce up to 600,000 acre-feet over any ten-year period for this purpose. The availability of this water has the effect of making greater amounts of water available for diversion from those rivers and thereby increasing the amount of water available for the Closed Basin area and recharge of the aquifer systems.

150. Based on the testimony of the State's computer modeling expert, Mr. Schroeder, which was unrebutted, the Court finds that the ground water system in the San Luis Valley is most sensitive to recharge. As the quantity of water available for recharge is reduced, the ground water table drops; as recharge is increased, the ground water table rises. As a result, the influence of the Rio Grande Compact and the availability of water for recharge is very significant in determining the appropriate conditions to model or in making decisions about the Valley's hydrology.

151. When all of these factors are taken together, it is apparent that the change in the unconfined aquifer's ground water levels documented in the Crouch Report is not a reliable basis for making projections about long-term trends in the water levels in the unconfined aquifer. Likewise, the period 1970-1979 is not reflective of the aquifer conditions existing in the San Luis Valley at the time that the application or amended application was

filed in this case. The Court finds that 1970-1979 is not the appropriate period for use to determine whether the ground water sought by the Applicant is nontributary.

I. EVAPOTRANSPIRATION

152. Reduction in evapotranspiration by eradication of phreatophytes is critical to the Applicant's theory and proof that the ground water it claims in [sic] nontributary. Only by finding very high rates of evapotranspiration can the Applicant reduce its stream depletions to a level that it contends would make the water it claims nontributary. All of the efforts to model the Valley's hydrologic system address the reduction in evapotranspiration by native vegetation resulting from lowering the ground water table. This "salvage" as it is sometimes called has a substantial impact on the results predicted by the computer models. If too much "salvage" is claimed, the calculated water level declines and stream depletions will be understated. Due to the important role evapotranspiration plays in the accuracy of any computer model's predictions, and since the Applicant and the Objectors rely upon computer model predictions, it is necessary for the Court to make findings regarding evapotranspiration by native vegetation.

153. The Applicant sought to quantify the reduction in evapotranspiration by plant life in the Valley that would be caused by the Applicant's withdrawal of 200,000 acre-feet of ground water per year. This reduction in evapotranspiration would be caused by the Applicant's ground water pumping lowering the water table below the root zones of plants that obtain all or a portion

of their water supply from the water table. According to Applicant's expert, Mr. Brogden, at the end of 100 years of pumping, 178,050 acre-feet or 89.02% of the total amount of water to be withdrawn annually by the Applicant would come from the reduction in evapotranspiration caused by the Applicant's eradication of phreatophytes. *See* Applicant's Exhibit 264.

154. Evapotranspiration can occur when the water table is sufficiently close to the surface of the ground to enable plants to derive all or a portion of their water supply from the aquifer. According to the evidence, the lowering of the water table will reduce the amount of water that plants can derive from the water table. When the water table has been lowered sufficiently, the plants will no longer be able to obtain the water from the water table and, in most instances, the plant life will die.

155. In the San Luis Valley there are areas where the water table is sufficiently close to the ground surface to enable plants to obtain all or a portion of their water supply from the water table. This can occur, for example, in areas where subirrigation is still practiced, and in the wetland areas, such as those found in the vicinity of the Applicant's Villa Grove property, the Russell Lakes area, the Mishak Lakes area, on the Baca Ranch and adjacent land, and the San Luis Lakes area. In addition, outside the wetland areas there are non-cropland areas where native vegetation consumes water from the water table. The areas in which the Applicant asserts that this evapotranspiration occurs is shown on Applicant's Exhibit 174. The majority of these lands are located north of the Rio Grande in the Closed Basin area.

156. The evidence contained in Applicant's Exhibit 65, establishes that in order to quantify the amount of evapotranspiration from the water table by plant life, it is necessary to know the particular plant species involved, the depth to water, the locations within the root zone from which a plant is capable of extracting water, and the depth below land surface from which a plant can no longer obtain water from the root zone. In addition, for any given plant species, Exhibit 65 states it is important to know the density, or the number of plants, per given area; the rooting depth of the plant; the water quality; and any other sources of water available to supply the water needs of the plant.

157. Another important factor in accurate quantification of evapotranspiration is the quantity of evapotranspiration that is eliminated for every unit decline in the water level. The Applicant assumes that this is a linear function from the starting water table elevation down to the extinction depth, *i.e.*, the depth below which the plant no longer obtains water from the water table. The Objectors dispute this assumption and assert instead that a curvelinear function more accurately reflects the phenomenon because the plants take more of their water supply from shallower depths. Curvelinear functions have been adopted by Mr. Phil Emery in his studies of evapotranspiration and have also been used by the State Engineer in his investigations of evapotranspiration. Based on the evidence presented, the Court finds that a curvelinear function is the more accurate method to simulate the actual distribution of the depths from which plants withdraw their water from the water table and,

hence, the amount of reduction in evapotranspiration per unit of water level decline.

158. The Applicant's analysis of evapotranspiration used three vegetation classifications. The first was cultivated croplands where the starting depth to water is 2 feet, the extinction depth is 6 feet, and the maximum evapotranspiration assigned is approximately 0.6 acre-feet per year. The second was so-called "free water surface areas" where the depth to water ranged between 0 to 2 feet below the land surface. The extinction depth for this classification was 2 feet and the maximum evapotranspiration is assumed to be 2.6 acre-feet per year. This classification covers many of the phreatophyte plant species found in wetlands. The Applicant's Exhibit 176 depicts 88 square miles or approximately 56,000 acres of these wetland areas in the Closed Basin. The final classification used by the Applicant is the so-called "native vegetation areas." The starting depth to water for this classification is 2 feet, the extinction depth is 10 feet, and the maximum evapotranspiration rate is approximately 1.8 acre-feet per year. This classification also includes many of the phreatophyte plant species.

159. The Applicant made no detailed field surveys of the location and distribution of the various vegetation classifications. Rather, it relied on farmland mapping by the Soil Conservation Service, general observations made while driving through the San Luis Valley (sometimes known as windshield surveys), and general comparison of its mapping to high altitude aerial photography. The Applicant made no effort to determine the various types of plants actually found within each of its classifications,

the density of the plant types within its various classifications, or whether all of the plants in fact obtained all or a portion of their water from the water table. The Applicant also made no investigation of the rates and depths from which the particular plant species in fact obtain water from the water table.

160. The uncontested testimony of the Objectors' expert, Dr. Cooper, established that in the greasewood and rabbit brush communities there are members of those plant communities which are not phreatophytes during all or a substantial portion of their life cycle. Accordingly, reduction in evapotranspiration cannot be claimed for the portions of those plant communities that do not obtain water from the water table.

161. The Applicant used its computer model to simulate the reduction in evapotranspiration. In the model's four square mile grid cells, the Applicant selected a maximum evapotranspiration rate based upon the starting depth to water in the cell and the vegetative classification assigned to the cell. The starting depth to water is extremely important for determination of evapotranspiration. If the starting water level is too high, more evapotranspiration will be calculated than actually occurs. The Applicant's determination of the starting depth to water is based on water level information reported in U.S.G.S. Hydrologic Atlas 381, based upon 1971 water levels, and the Crouch Report. Each of the reports contains a map of the entire San Luis Valley showing depth to water contours. The smallest contour interval, 6 feet is found in Hydrologic Atlas 381. The contour intervals in the Crouch Report are 10 feet, the same as the maximum extinction depth used by the Applicant. Using this information, the

Applicant prepared its own depth to water map, Applicant's Exhibit 173, with contour intervals of 2 feet. These contours were created by interpolation from the underlying data. Because of the multiple levels of approximation contained in the creation of Applicant's Exhibit 173, its accuracy and reliability is subject to substantial doubt.

162. The contoured water level data shown in Applicant's Exhibit 173 required yet another level of interpolation before information could be used in its computer model. The computer model requires one starting depth to water to be assigned to each grid cell. For many grid cells there was more than one water level contour on Applicant's Exhibit 173. When that occurred, Applicant's expert, Ms. McGowan, testified that the shallowest depth to water in the cell was selected in order to assign the maximum evapotranspiration rate. Once this had been done, no further adjustments were made to the beginning depth to water. *Id.* The Court finds that this methodology results in an over estimation of evapotranspiration in almost all circumstances.

163. Another approximation contained in the Applicant's determination of evapotranspiration was in its assignment of vegetative classifications to the cells of its model. Each model cell was assigned a single vegetative classification for the entire four square mile area. It is obvious that nature has not arranged vegetation in this manner. The Applicant has not done any careful study of how this approximation or any of the other approximations contained in its analysis affect the accuracy of its prediction.

164. The Applicant's computer model used a linear function to simulate reductions in evapotranspiration for each of the three vegetation classifications. Accordingly, the reduction in evapotranspiration is assumed to occur evenly for each unit of decline in ground water elevation. The Applicant defended this assumption on the basis that it was the function contained in the manual for the MODFLOW model it used. However, as acknowledged by the Applicant's experts and experts for the Objectors, modification of the model's function for evapotranspiration can be made and have been commonly made by other investigators in order to more accurately replicate the actual rate and depth distribution of evapotranspiration.

165. The Court finds that the method adopted by the Applicant to simulate evapotranspiration is not accurate or reliable. Based upon the evidence, it appears that the Applicant materially overstates the potential for reduction in evapotranspiration as a result of lowering ground water levels. This overstatement is a result of the manner in which the Applicant selected its starting depth to water, the assumptions inherent in its maximum evapotranspiration rates, including assumptions about high plant densities, plant cover, plant distribution and the use of a linear function to replicate evapotranspiration reductions. Had a curvelinear function been used for the various vegetation categories, the model would have calculated less potential reduction in evapotranspiration. In addition, the Applicant's selection of the extinction depth in its non-cropland areas is shallower than that reported by most other investigators. The effect of this shallower extinction depth is not to be "conservative" as stated by the Applicant's expert. Rather, the effect is to

increase the amount of evapotranspiration reduction that can occur for any unit decline in the water table. This is particularly significant for areas where the water level declines will be less than the full extinction depth of the plants. For those areas, a shallower extinction depth has the effect of permitting greater calculated reductions in evapotranspiration. The result of making these assumptions is that the Applicant's computer model calculates smaller water level declines than will actually occur.

166. The evidence submitted by the Applicant did not address the nature of the plant communities or the effect on the plant communities of the reduction in water levels to be caused by its proposed pumping. However, the uncontested evidence offered by the Objectors shows that outside the agricultural areas, the plant communities which obtain all or a portion of their water supply from the water table are phreatophytes. In the natural vegetation areas other than wetlands, the plant communities are principally greasewood and rabbit brush. Within the wetland areas, the plant communities include bulrushes, sedges, alkali cord grass, alkali bulrushes, spike rushes, rushes, salt grass and other aquatic and wetland vegetation.

167. The undisputed evidence establishes that in the northern and eastern portions of the Closed Basin area there are in excess of 50,000 acres of wetlands. These wetland areas exist near Villa Grove, on the Baca Ranch, in the area of Russell Lakes and Mishak Lakes, along San Luis Creek, in the area of Head and San Luis Lake and in numerous other areas depicted on Objectors' Exhibit State 26. In these wetland areas the vegetation is phreatophytes. The more technical classification for many of

these plants is hydrophytes, a subclassification of phreatophytes. Near Villa Grove, the wetland communities have one to two meters of peat soils with hydrophytes growing in them. The existence of this peat soil indicates a saturated soil condition which has existed for thousands of years. In other wetland areas in the San Luis Valley, peat soils are also present indicating that these are natural wetlands which have existed for many years.

168. The detailed investigations carried out by the Objectors' expert, Dr. Cooper, demonstrate that the source of water for these wetlands is both surface water and ground water from the unconfined aquifer, tributary to surface streams. By the use of over 190 observation wells, Dr. Cooper established that the wetland areas he studied derived their water from the water table and surface water and that the water table is in hydraulic connection with the surface streams. The surface streams found to be in hydraulic connection with the water table included Rock Creek, San Luis Creek, Russell Creek, Saguache Creek, LaGarita Creek, Werner Arroyo, Big Spring Creek, Little Spring Creek, and Sand Creek in the vicinities studied by Dr. Cooper. The Court finds this to be fact. Dr. Cooper's unrebutted testimony also establishes that these wetland areas are representative of wetlands throughout the San Luis Valley.

169. Each of the streams found by Dr. Cooper to be in hydraulic connection with the water table is also a stream that the Division Engineer has testified is overappropriated. If the water on these streams was not used by the wetland vegetation, then it would presumably be available to vested water rights in the order of their priority.

170. The Applicant's expert, Mr. Brogden, described the effect on the native vegetation from the lowering of the water table as a "shift in plant communities". He then admitted that this shift, in fact, meant that the vegetation would die. This testimony was confirmed by Dr. Cooper. It was Dr. Cooper's uncontested opinion that the water level declines predicted to occur from the Applicant's pumping would cause the total eradication of at least 26,000 acres of wetland phreatophytes in the Villa Grove, Baca, and San Luis Lakes areas. It was his opinion that at least an additional 24,000 acres of wetlands would be substantially injured. It was Dr. Cooper's uncontested testimony that the wetland areas, in which there is standing water and aquatic phreatophytes, are the most biologically diverse and the most important to water fowl. He further testified that it is these portions of the wetland phreatophyte communities that would be the first to be eradicated as a result of water level drawdowns. The wetland phreatophytes that would not be totally eradicated are the less biologically productive and less important species.

171. The Court finds from the evidence presented by both the Applicant and the Objectors that Applicant's proposed ground water withdrawal will result in the eradication of vast acreages of native phreatophytes, the elimination of at least 26,000 acres of wetlands, and substantial injury to at least an additional 24,000 acres of wetlands in the San Luis Valley.

172. The Court finds that by the Applicant's method of calculation, the Applicant has over-estimated the amount of potential evapotranspiration which can be eliminated by its projected lowering of the water table.

Since this assumed reduction in evapotranspiration is reflected as recharge to the model, the Applicant's projected water level declines are understated. According to the testimony of Objectors' expert, Dr. Sharma, the Applicant's model routes the recharge from reduced evapotranspiration down through the extensive faults and fracture zones simulated in its computer model. The recharge then comes up through faults under Applicant's property and is simulated as being withdrawn by the Applicant's wells. The Court finds that the effect of this modeling artifice is to greatly reduce the computed drawdowns from Applicant's proposed well pumping and thereby understates the actual amount of the drawdown, the actual impact on other underground water rights, and the actual stream depletions that would result.

J. COMPUTER GROUND WATER FLOW MODELS

173. Two ground water models of the San Luis Valley were submitted into evidence in this case, one by the Applicant and one by the Objector State Engineer. Both models were based on the McDonald-Harbaugh modular, three-dimensional finite-difference ground water flow model known as MODFLOW. Applicant's Exhibit 75. This computer model is an accepted and recognized ground water model that is capable of simulating multi-layered aquifer systems, stream-aquifer interaction, drains, evapotranspiration, and other pertinent features of the hydrologic system. The fact that this model is an accepted and recognized model does not mean that the results generated by any given application of the model are correct. Rather, whether the results of the Applicant's model or

the State's model are correct and reliable requires the Court to make findings on the manner in which the model has been set up and operated, the availability of accurate data and of the accuracy of the input and assumptions supplied by the user to the model.

174. In the San Luis Valley there is a substantial lack of data about aquifer characteristics and water levels, particularly in the deeper portions of the aquifer systems and on the edges of the Valley. This is confirmed at pages 104-106 of WRI 86-4113 where the authors identify a series of additional data that need to be independently collected and verified in order to construct a reliable model of the San Luis Valley. This was also confirmed by Dr. Sharma who testified that modeling efforts for the San Luis Valley cannot be fully reliable because of this lack of data and the uncertainty in other parameters such as evapotranspiration and recharge. This lack of data and the data uncertainties limit the reliability of the models predictions.

175. The State Engineer has used MODFLOW in the "head" mode. Simply stated, this means that the model attempts to predict changes in actual water level elevations relative to ground surface. As invoked by the State Engineer, the model is capable of predicting both increases and decreases in ground water levels as a result of changes in recharge to and discharge from the aquifer system.

176. The Applicant has chosen to use the MODFLOW model in the "change" or "impact" mode. Use of the model in this mode does not entail an effort to match predicted changes in ground water level to actual

observed changes. Rather, the model is adjusted to reflect "existing conditions." When new stresses, such as pumping, are imposed on the model, the change caused by the new stresses can be determined.

177. The Applicant's model contains six layers, starting at the ground surface and extending to a depth of approximately 18,000 feet beneath land surface in the Baca graben. *See* Objectors' Exhibits JO 139 and 140. The grid cells used in the model are two miles by two miles. *See* Objectors' Exhibit JO 131. In contrast, the State Engineer's model has four layers, a total depth of 3,100 feet and grid cells of 1/2 mile by 1/2 mile through the central part of the San Luis Valley and one mile by 1/2 mile in the remainder of the Valley.

178. The Applicant relied on existing information on aquifer characteristics for input to its model. The Applicant did not drill any test wells or other wells to obtain information about the deeper aquifers underlying its property. The Applicant's model incorporates Mr. Brogden's assumptions about the aquifer conditions and hydrologic conditions in the San Luis Valley, including stream conductance and the role of faults in the San Luis Valley. It also incorporates the Applicant's assumptions about the location and extent of evapotranspiration in the San Luis Valley. The model assumes that 1970 was a period of equilibrium in the San Luis Valley. The model assumes that inflows and recharge occurring in the 1970-1979 period do not change in the future and that the discharge from the aquifers at the rates which occurred in the 1970-1979 period does not change in the future. The Applicant's model also assumes that only a short reach of San Luis Creek and Saguache Creek were in hydraulic

connection with the unconfined aquifer at the beginning of 1970, and that the Rio Grande, Conejos River, and the Alamosa/La Jara River were in hydraulic connection with the unconfined aquifer in 1970. No other streams in the San Luis Valley are represented in the model. The model, as set up by the Applicant, is only capable of predicting declines in ground water levels and is incapable of ever predicting an increase in ground water levels.

179. Before a computer model can be used to make predictions, it must be both calibrated and verified. Calibration is the process of running the model, comparing its predictions to known data, and then making appropriate adjustments to the model input data in order to make its predictions more precisely match observed data. There are two general types of calibration. One is steady-state calibration, in which model predictions are adjusted to match observed data at a fixed point in time. Following steady-state calibration models can be subject to transient calibration, which involves running the model for a period of time for which known data is available and adjusting input data until the predicted results closely match the known data. The purpose of calibration is to test the soundness of the model framework, the assumptions and the data input into the model and to assess the model's predictive ability. The evidence established also that the better practice is to follow a transient calibration with a verification. Verification involves running the model for a different time period for which known data is available and comparing the model's predictions with the known data. This provides an independent check of the adequacy of the calibration and the model's predictive ability.

180. The change or impact model used by the Applicant cannot be calibrated in a steady-state. Rather, the only type of calibration available is a transient calibration. For purposes of calibrating its model, the Applicant's experts, *inter alia*, adjusted "net aquifer depletion" in the unconfined aquifer and the first 1,500 feet of the unconfined aquifer. Starting in 1970, the Applicant attempted to assign sufficient annual withdrawal from the aquifers to result in water level declines matching those reported by Mr. Crouch for 1979. No effort was made to compare the water level declines predicted between 1970 and 1979 with observed data. No effort was made to calibrate withdrawals from the confined aquifer by comparing observed artesian pressure declines with predicted declines. No effort was made to verify the model after its calibration.

181. Once the Applicant had completed calibration, it attempted to run the model for 100 years. This did not work because the level of aquifer depletion assumed by the model resulted in the model predicting the complete dewatering of numerous areas of the unconfined aquifer. When this occurs, the model fails to "converge" or complete the numeric calculations and the run cannot be completed. The model series in which this problem occurred has been referred to as the Applicant's 100 Series.

182. To correct this problem, the Applicant changed the first layer of its model, which originally corresponded to the unconfined aquifer, to a 500-foot thick layer encompassing both the unconfined aquifer and a portion of the confined aquifer. The principal effect of this change was

to ignore the hydrologic distinction between the unconfined and confined aquifers and permit all existing pumping simulated in the unconfined aquifer to take water from both the unconfined and confined aquifers. By this modeling artifice, the Applicant was able to construct a model that would run for a 100-year predictive period without model cells drying up. This was referred to as the Applicant's 500 Series.

183. The 500 Series was never separately calibrated. Instead, the Applicant relied upon the initial 10-year calibration of its 100 Series for its 500 Series. The Applicant then asserted that the 100 Series and the 500 Series were equally reliable and that the 500 Series made essentially the same predictions. This conclusion is refuted by the overwhelming weight of the evidence.

184. The Court finds that the opinions of the Applicant's experts, based upon its model, are not credible. The Applicant's model was not properly calibrated or verified and incorporated a substantial number of assumptions about the hydrologic system in the San Luis Valley that the evidence has shown to be incorrect. The Applicant's model is not able to predict increases in ground water levels and cannot accurately predict the actual water level declines or stream depletions that will be caused by the Applicant's proposed pumping. As aptly stated by the Applicant's modeling expert, Mr. Koch, the model was not intended to replicate reality, but simply to prove that the water the Applicant claimed was nontributary. The Applicant attempted to do this by adopting modeling artifices that resulted in an understatement of the drawdowns and stream depletions that would be caused by the Applicant's proposed pumping.

185. The modeling effort undertaken by the State Engineer's office was originally undertaken for administrative purposes and is far more extensive and thorough than that of the Applicant. There has been an effort to calibrate the State's model, in both the steady-state and transient modes. The State's model does not purport to be able to predict with exact precision the quantity and location of stream depletions to be caused by the Applicant's proposed pumping to all streams. Rather, the claim advanced by the State, with respect to its model, is that it is adequate to make a determination whether the ground water proposed to be withdrawn by the Applicant will deplete certain surface streams within the San Luis Valley at a rate greater than 1/10th of one percent of the amount withdrawn annually. The Court finds that the State Engineer's model is adequate for this purpose.

186. The evidence establishes that there are a substantial number of drains in the agricultural areas of the San Luis Valley, that there are vested water rights on these drains, that these drains impact regional ground water levels, and that the flows in drains have an impact on amount of evapotranspiration. Neither of the models presented in evidence attempted to simulate the hydrologic effect of drains. Similarly, the evidence establishes that there is very little data regarding the characteristics of the aquifers below 1,000 feet in the San Luis Valley. Finally, there is an absence of observation well data and information on water levels in the deeper portions of the confined aquifer throughout the Valley and in both the confined and unconfined aquifers at the edges of the Valley. The evidence has established that this lack of data cannot be cured through calibration and will therefore

always result in a model the solution of which is not unique. The lack of data limits the Court's ability to rely exclusively upon modeling results.

187. The Court finds that the State's model is more reliable than that of the Applicant. That model showed the Applicant's proposed ground water withdrawals would deplete the surface flows of the Rio Grande and San Luis Creek by 3.7 percent of the amount withdrawn annually or about 7,400 acre feet per year annually by the 100th year of pumping. This is substantially in excess of 200 acre feet per year or 1/10th of one percent of the 200,000 acre feet that Applicant seeks to withdraw annually.

K. CONCLUSIONS

188. To prevail on its claim the Applicant was obliged to prove by a preponderance of the evidence that the water it sought to withdraw would not deplete the flow of a natural stream in excess of 1/10th of one percent of the amount of water withdrawn annually. That amount is 200 acre feet. The Court finds that the Applicant's proposed pumping will deplete the flow of a natural stream, including natural streams as defined in §§37-82-101(2) and 37-92-102(1)(b), in an amount far in excess of 200 acre feet annually. The evidence establishes that the depletion to surface flows of the Rio Grande and San Luis Creek alone, even under the limitation inherent in computer modeling, will be approximately 7,400 acre feet. Depletions of approximately 3,600 acre feet per year will occur to Big Spring Creek alone, and this creek was not included in the models. In addition, there are many

other streams in the Closed Basin whose flow will be depleted by the Applicant's ground water withdrawals, the depletions to these streams not calculated by the computer models. The depletions to the surface flows of those streams will be in addition to the depletions already quantified. By looking at the flows of surface streams alone it is clear that the ground water the Applicant proposed to withdraw is tributary ground water.

189. The evidence also established that the Applicant's proposed ground water withdrawals would reduce the yield of the Closed Basin Project by at least 38,000 acre feet annually, and the true impact is likely to be much greater. This amount is well in excess of the 1/10th of one percent or 200 acre feet annual minimum depletion allowed if the Applicant is to establish that the water is nontributary. The Closed Basin Project's decreed tributary ground water is a vested water right that would be injured by the Applicant's proposed withdrawals.

190. The parties disagree as to the meaning of the terms "aquifer conditions existing at the time of the permit application" in §37-90-103(10.5) and disagree over what time period should be used in this case. The Applicant seeks to rely upon the 1970-1979 period for these purposes. The Objectors do not believe that this is the appropriate period of time. For the purposes of this case the Court need not resolve that issue because the Court is satisfied that the ground water sought by the Applicant is tributary even if the period 1970-1979, or any period thereafter is used. Under even the Applicant's 1970-1979 period, the evidence established that the ground water sought by the Applicant is tributary and would deplete the flows of a natural stream, even if limited to the

surface flows, in an amount in excess of 1/10th of one percent of amount withdrawn annually.

191. Based upon the testimony of witnesses and evidence adduced in this case, the Court specifically finds that the water sought to be pumped by the Applicant is tributary ground water. Based upon the testimony and evidence of Mr. Schroeder, the Court further finds that the water is tributary to the Rio Grande. Based upon the testimony and evidence of Messrs. Schroeder, Davey, Vandiver, Bellis, Boddie, and Harmon, the Court further finds the ground water sought by the Applicant is tributary to the streams entering the Closed Basin as described in paragraph 94 above, to Head and San Luis Lakes as described in paragraph 95 above, and the Closed Basin Project as described in paragraphs 101-107 above. The Applicant's pumping in the manner proposed would result in material injury to water rights taking their supply from all of these sources and to the water right of the Closed Basin Project. There well may be injury to other underground water rights but the Court makes no finding on that issue at this time.

192. The Court finds based upon all of the evidence, including the predictions made by the State's model, that the ground water which the Applicant seeks to withdraw is tributary ground water. The evidence presented at trial has not established this fact simply by a preponderance of the evidence; the Court finds that the ground water has been shown to be tributary beyond a reasonable doubt.

VI. CONCLUSIONS OF LAW

"The law is a sort of hocus-pocus science."

– Charles Macklin

1. The foregoing Findings of Fact are incorporated herein as if fully set forth.

2. The Application herein is one contemplated by law, and this Court has exclusive jurisdiction over the subject matter of the proceeding. §37-92-203(1).

3. The Application and the Amended Application herein were filed with the Water Clerk in accordance with the provisions of §37-92-302(1)(a), C.R.S.

4. Timely and adequate notices of the filing and of the contents of the Application and the Amended Application herein were given in the manner provided by law, and this Court has jurisdiction over all persons or entities affected hereby, whether they have appeared of not. §37-92-302, C.R.S.

5. The burden of proof in any civil action shall be by a preponderance of the evidence. §13-25-127. The burden of proof resting upon the Applicant to prove the elements of its case does not shift during the course of trial. §37-92-304, C.R.S.; *Exchange National Bank v. Sparkman*, 191 Colo. 534, 554 P.2d 1090 (1976).

6. "Preponderance of the evidence" means "evidence which is of greater weight or more convincing than the evidence which is offered in opposition to it, a fact sought to be proven must be more probable than not, that is, evidence which as a whole shows that the fact sought to be proved is more probable than not . . . That which

best accords with reason and probability." Blacks Law Dictionary, 1064 (5th Ed. 1979); *Page v. Clark*, 197 Colo. 306, 318, 592 P.2d 792, 800 (1979).

7. Ground water in Colorado is presumed to be tributary unless proven otherwise by a preponderance of the evidence. *Safranek v. Limon*, 123 Colo. 330, 228 P.2d. 975 (1951); *DeHaas v. Benesch* 116 Colo. 344, 181 P.2d 453 (1947). The State Engineer has issued his Determinations of Facts pursuant to §37-92-302(2) which conclude that the ground water sought to be withdrawn by the Applicant is tributary and that existing water rights could be injured by the Applicant's proposed ground water withdrawals. This determination is presumptively correct. §37-92-305(6); *see Danielson v. Jones*, 698 P.2d. 240 (Colo. 1985).

8. Colorado law recognizes three categories of water: waters of the natural stream, designated ground water and nontributary waters. All waters of the natural stream are, pursuant to Sections 5 and 6 of Article XV of the Colorado Constitution, subject to appropriation. As to waters of any natural stream "priority of appropriation shall give the better right as between those using the water for the same purpose." Colorado Constitution, Article XV, Section 6.

9. Nontributary water is not subject to appropriation pursuant to the Constitution. Instead, the Colorado Legislature has full power to legislate concerning nontributary waters, and can subject them to appropriation or to other methods of allocation, administration, and

use. *State of Colorado v. Southwestern Colorado Water Conservancy District*, 671 P.2d 1294 (Colo. 1983) (hereinafter the *"Huston"* decision).

10. Since the Constitution governs allocation of all waters of the natural stream, only waters which fall outside that category and are not waters of the natural stream subject to appropriation can be subject to such legislative control. The Colorado Legislature has adopted legislation addressing the allocation and use of nontributary ground water and defining such ground water by reference to "waters of the natural stream." C.R.S. §37-90-103(10.5) defines nontributary ground water as follows:

> 'Nontributary groundwater' means that groundwater, located outside the boundaries of any designated groundwater basins in existence on January 1, 1985, the withdrawal of which will not, within 100 years, deplete the flow of a natural stream, including a natural stream as defined in Sections 37-82-101(2) and 37-92-102(1)(b) at an annual rate greater than 1/10th of 1% of the annual rate of withdrawal. The determination of whether groundwater is nontributary shall be based upon aquifer conditions existing at the time of permit application. . . .

This statute must be interpreted *in pari materia* with constitutional, statutory, and case law definitions of waters that are subject to constitutional appropriation.

11. The Colorado Legislature is presumed to be aware of the well developed statutory and case law defining what waters are subject to appropriation and therefore cannot constitute nontributary ground water. Acting

with such knowledge, *see Thompson v. People*, 181 Colo. 194, 200, 510 P.2d 311, 313 (1973), the Colorado Legislature adopted the definition of nontributary ground water which specifically refers to and adopts the constitutional term used to describe waters that are subject to appropriation: "natural stream."

12. To give proper effect to the intention of the Legislature, the term "natural stream" as used in C.R.S. §37-90-103(10.5) must be accorded the same meaning as in Sections 5 and 6 of the Article XV of the Colorado Constitution and statutory and case law defining waters subject to constitutional appropriation.

13. C.R.S. Section 37-92-102(1)(a) declares the

> policy of the State of Colorado that all water in or tributary to natural surface streams, not including nontributary groundwater as that term is defined in Section 37-90-103, originating in or flowing into this State have always been and are hereby declared to be the property of the public, dedicated to the use of the people of the State, subject to appropriation and use in accordance with Sections 5 and 6 of Article XV of the State Constitution and this Article.

A right to use water constitutes "a water right," defined as "a right to use in accordance with its priority a certain portion of the waters of the State by reason of appropriation of the same." C.R.S. §37-92-103(12). "Waters of the state" in turn encompasses "all surface and underground water in or tributary to all natural streams within the State of Colorado, except for waters

referred to in §37-90-103(6)."[5] Finally, "Underground Water"

> as applied in this article for the purpose of defining the waters of a natural stream, means that water in the unconsolidated alluvial aquifer of sand, gravel, and other sedimentary materials and all other waters hydraulically connected thereto which can influence the rate or direction of movement of the water in that alluvial aquifer or a natural stream.

C.R.S. §37-92-103(11). These definitions, together encompassing the definition of waters subject to appropriation pursuant to the Constitution – that is, waters of the natural stream – are consistent with Colorado case law that interprets the term "natural stream" to mean all sources of supply which make up a natural stream, including subsurface percolating water. *In re German Ditch*, 56 Colo. 253, 270, 139 P.2d 9 (1913). Colorado law has long recognized that a natural stream includes water "tributary" thereto in the broadest sense:

> [I]t is a matter of no moment whether water reaches a certain point by percolation through the soil, by a subterranean channel, or by obvious surface channel. If by any of those natural methods it reaches the point, and is there appropriated in accordance with law, the appropriator has a priority in it which cannot be divested by the wrongful diversion by another, nor can there be any substantial diminution.

McClelland v. Hurdle, 3 Colo. App. 430, 33 P. 280 (1893).

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[5] §37-90-103(6) refers to designated groundwater.

14. C.R.S. §37-82-101(2), specifically referred to in §37-90-103(10.5), further defines waters of the natural stream. It provides:

> A stream system which arises as a natural surface stream and, as a natural or man-induced phenomenon, terminates within the State of Colorado through naturally occurring /evaporation and transpiration of its waters, *together with its underflow and tributary waters*, is a natural surface stream subject to appropriation as provided in subsection (1) of this section [37-82-101(1)] [Emphasis added].

> Section 37-82-101(1) provides in pertinent parts, as follows:

> The water of every natural stream, as referred to in Sections 5 and 6 of Article XVI of the state constitution, includes all the water occurring within the State of Colorado *which is in or tributary to a natural surface stream* but does not include nontributary groundwater as that term is defined in Section 37-90-103. [Emphasis added].

15) Reading these provisions together, it is clear and the Court must conclude as a matter of law that the unconfined aquifer is water of a natural stream. The unconfined aquifer meets both the statutory definition of waters subject to appropriation in §37-82-101(2), and the more general definition of waters of the natural stream set forth above. It comprises an unconsolidated alluvial aquifer as well as a stream system which arises as a natural surface stream which terminates within the state, together with its associated underflow and tributary water. Each of the streams described in paragraph 94 in

Part V above are also natural streams under these controlling legal standards as are the Rio Grande, Conejos River, Alamosa River and LaJara Creek.

16. C.R.S. §37-90-137(4) provides that in the issuance of permits to withdraw nontributary ground water, the provisions of Section 37-90-137(1) and (2) apply. Section 37-90-137(2) specifies that upon receipt of a well permit application, the State Engineer

> Shall make a determination as to whether or not the exercise of the requested permit will materially injure the vested water rights of others. If the State Engineer finds that there is unappropriated water available for withdrawal by the proposed well and that the vested water rights of others will not be materially injured, and can be substantiated by hydrological and geological facts, he shall issue a permit to construct a well, but not otherwise . . . .

Both the Applicant and the Objectors acknowledge the applicability of this section and its requirement that vested water rights cannot be materially injured by the withdrawal of nontributary ground water.

17. Section 37-90-102(1) goes on to provide:

> Economic development of this resource shall allow for the reduction of hydrostatic pressure levels and aquifer levels *consistent with the protection of appropriative rights in the natural stream system.*

Reduction of hydrostatic pressure levels and aquifer water levels in accordance with allowable annual withdrawals by nontributary ground water rights does not constitute material injury to vested nontributary ground

water rights; *see* §37-90-137(4)(c), C.R.S., but the General Assembly recognized that reductions of hydrostatic pressure levels and aquifer water wells may not protect tributary ground water rights as required by the Constitution.

18. The nature and scope of reserved rights are federal questions. *Eagle County*, 421 U.S. at 526; *United States v. District Court for Water Division No. 5*, 421 U.S. at 529-30. *See United States v. Denver*, 656 P.2d at 9; *United States v. Bell*, 724 P.2d 631, 641 (Colo. 1986) (federal water rights exist independently of state law and procedures).

19. Congress has the exclusive power to legislate with respect to property belonging to the United States. U.S. Const. Art IV, §3, Cl. 2. *Cf. Kleppe v. New Mexico*, 426 U.S. 529 (1976) (state statute purporting to regulate burros on the public domain unconstitutional).

20. Only that water which is in excess of that amount this Court has determined to be necessary to fulfill the purposes of the respective federal reservations is available for subsequent appropriators. *United States v. Denver*, 656 P. 2d at 21, 22.

21. State courts have a "solemn obligation" to follow federal law where reserved rights are concerned, *Arizona v. San Carlos Apache Tribe*, 463 U.S. 545, 571 (1983).

22. Where reserved rights are concerned, the application of Colorado's definition of what constitutes material injury to federal reserved water rights is not necessarily determinative of the availability of water, or whether a decree injurious to the interests of the United States may be entered. *See e.g., Cappaert, supra.*

23. The doctrine of "maximum utilization" frequently invoked by the Applicant has been tempered by the Colorado Supreme Court in *Alamosa-La Jara Water Users Ass'n v. Gould, supra.* There, when addressing the regulation and development of the water resources of the San Luis Valley the Court stated:

> We note that the policy of maximum utilization does not required a single-minded endeavor to squeeze every drop of water from the valley's aquifers. Section 37-92-501(2)(e) makes clear that the objective of "maximum use" administration is "optimum use." (footnote omitted). Optimum use can only be achieved with proper regard for all significant factors, including environmental and economic concerns.(Citations omitted).

Id, 674 P.2d at 935. Accordingly, maximizing use is not the controlling consideration in the Court's analysis of the evidence in this case.

24. Ground water is considered to be nontributary if its withdrawal will not, within one hundred years, deplete the flow of a natural stream, including a natural stream as defined in Sections 37-82-101(2) and 37-92-102(1)(b), at an annual rate greater than one-tenth of one percent of the annual rate of withdrawal. The determination of whether ground water is nontributary shall be based on aquifer conditions existing at the time of the permit application. §37-90-103(10.5), C.R.S.

25. The parties disagree as to the meaning of the terms "aquifer conditions existing at the time of the permit application." The Court need not resolve this issue because whether the Court uses the period 1970-1979 as suggested by the Applicant, or any period thereafter,

does not change the result. Under even the Applicant's 1970-1979 period, the evidence established that the ground water sought by the Applicant is tributary.

26. The Applicant argues that in determining whether the water it seeks to withdraw is nontributary, this Court may only look at impacts to "natural streams" as that term is defined in §37-87-102(1)(b). This proposition is incorrect for several reasons. First, §37-87-102 by its own terms defines "natural stream" only "as used in" Article 87. Second, such a construction is inconsistent with §37-90-103(10.5) which specifically includes (but is not limited to) natural streams as defined in §§37-82-101(2) and 37-92-102(1)(b). In defining natural streams, these provisions include not only the surface stream as physically defined by its channel, but also include as part of the stream the ground water and underflow tributary to those surface flows. Thus, impacts to ground water tributary to the surface streams are relevant to the inquiry of whether the ground water sought by the Applicant is nontributary.

27. Having found by more than a preponderance of the evidence that the unconfined aquifer is a natural stream and is hydraulically connected to and influences the rate and direction of flow of natural streams in the San Luis Valley, the Court concludes based on the evidence that the water in the unconfined aquifer is tributary to those streams and is therefore waters of the state and part of the "natural stream" as that term is used in §§37-90-103(10.5) and 37-82-101, C.R.S.

28. The Court concludes that the withdrawal of ground water sought by the Applicant will, within one

hundred years, deplete the flow of the natural streams within the San Luis Valley at a rate far greater than one-tenth of one percent of the annual rate of withdrawal. Therefore, as a matter of law the ground water which Applicant seeks a right to withdraw is tributary to the natural stream. This has been established in this matter beyond a reasonable doubt.

29. As set forth in the findings of fact, the preponderance of the evidence demonstrated that the Applicant's proposed ground water withdrawals would materially injure vested and decreed water rights on a number of streams in the San Luis Valley.

30. The Applicant has not shown that the requested withdrawals would not materially injure the vested water rights of others. Therefore, the Court concludes that as a matter of law the Applicant is not entitled entry of a decree for the relief it requested. *See* §37-90-137(2), C.R.S.

VII. JUDGMENT AND DECREE

31. The foregoing Findings of Fact and Conclusions of Law are incorporated herein.

32. The Application in this case is hereby DENIED AND DISMISSED.

33. The Court awards the Objectors their costs to be taxed as provided by law.

34. The Court reserves judgment with respect to the claims of Objectors against Applicant for their costs, expenses and attorneys fees as a term and condition of the Applicant's dismissal of its tributary claim on the eve

of trial. Applicant is entitled to a hearing on the reasonableness of the costs, expenses and fees claimed and that hearing will be the subject of a seperate order.

35. The Court directs the clerk to enter judgment as above provided.

DATED this 10th day of February, 1992.

BY THE COURT:

[ROBERT W. OGBURN]
ROBERT W. OGBURN
Water Judge
Water Division No. 3
State of Colorado

DISTRICT COURT, WATER DIVISION 3, COLORADO

CASE NO. 86CW46

ORDER FOR ENTRY OF JUDGMENT

CONCERNING THE APPLICATION FOR WATER RIGHTS OF:

AMERICAN WATER DEVELOPMENT, INC.,

IN ALAMOSA, CONEJOS, COSTILLA, HINSDALE, MINERAL, RIO GRANDE AND SAGUACHE COUNTIES.

"Delay and excessive expense now characterize a large percentage of all civil litigation . . . litigation costs have become intolerable, and they cast a lengthening shadow over the basic fairness of our legal system."

– Justice Lewis F. Powell, Jr.

THIS MATTER came before the Court on Objectors' Verified Bill of Costs Attributable to Dismissal of Claim of Tributary Ground Water Pursuant to Rule 41(a)(2), C.R.C.P.

Following the six-week trial of Applicant's nontributary groundwater claim, Objectors also filed their Verified Bill of Costs Pursuant to Rule 54(d), C.R.C.P.

Applicant objected to the payment of any fees and costs in connection with its Motion to Voluntarily Dismiss its Tributary Claim, although Applicant conceded that the Court could impose terms and conditions as part of the requested dismissal without prejudice under Rule 41(a)(2). By Order dated November 21, 1991, nunc pro

tunc October 10, 1991, the Court granted Applicant's Motion to Voluntarily Dismiss Part IV of the Amended Application conditioned upon Applicant paying Objectors all of their attorney fees, expert witness fees, costs, fees, and other expenses related to the tributary claim.

A hearing was held on April 21-23, 1992 to determine the reasonableness and necessity of those expenditures claimed pursuant to Rule 41(a)(2) and Rule 54(d).

The Court has reviewed the parties' pleadings, affidavits, and legal authorities as well as the evidence, exhibits, and statements of counsel and being fully advised, finds and concludes as follows:

RULE 41(a)(2) CLAIMS

Objectors' Rule 41(a)(2) claims are as follows:

1. Rio Grande Water Conservation District (RGWCD):

A.	Attorney Fees	$543,258.00
B.	Expenses	149,581.00
C.	Consultant Fees	548,602.00
D.	Post-Trial Fees	13,373.00
		$1,254,814.00

2. Rio Grande Water Users' Association (RGWUA):

A.	Attorney Fees	$279,814.00
B.	Expenses	36,478.64
C.	Consultant Fees	100,245.33
D.	Post-Trial Fees	12,738.00
		$429,275.97

3. San Luis Valley Water Conservancy District (SLVWCD):

A.	Attorney Fees/Costs	**$1,991.61**

4. United States of America (USA):

A.	Attorney Fees	$145,010.00
B.	Paralegal Fees	11,269.62
C.	Expenses	9,188.89
D.	Consultant Fees	190,166.68
		$355,635.19

5. State of Colorado (COLO):

A.	Attorney Fees	$207,926.00
B.	Paralegal Fees	24,926.00
C.	Expenses	7,694.72
D.	DOW Consultant Fees and Office Employees	172,691.34
E.	SEO Office Employees	67,988.68
F.	Post-Trial Fees	3,873.75
		$485,100.49

6. Conejos Water Conservancy District (CWCD):

A.	Attorney Fees	$51,982.00
B.	Post-Trial Fees	6,928.75
		$58,911.25

7. Oasis Land & Cattle Co. (Oasis):

A.	Attorney Fees	$1,652.50
B.	Post-Trial Fees	1,086.85
		$2,738.75

8.	First Interstate Bank:	
	A. Attorney Fees	**$7,667.90**
9.	Howard Platz:	
	A. Attorney Fees	$1,189.50
	B. Expenses	442.00
		$1,631.50
10.	Marold Ranches, etc., (McMillen clients):	
	A. Attorney Fees	**$2,332.61**
11.	Cotton Creek Ranch:	
	A. Attorney Fees	**$543.00**
12.	Dennis Felmlee:	
	A. Expenses	**$1,281.25**
13.	Timothy Lovato:	
	A. Attorney Fees	**$1,669.48**
14.	Gayle Nichols:	
	A. Filing Fee	**$20.00**
TOTAL AMOUNT CLAIMED PURSUANT TO 41(a)(2):		**$2,603,612.50**

Applicant contends that the expenditures to a great extent were unnecessary and therefore unreasonable. Applicant called Clyde O. Martz, a water lawyer, who testified that water procedures as provided for in the Water Right Determination and Administration Act of 1969, and amendments thereto, simply never contemplated the time consuming and extended litigation that occurred in this case and that the Objectors should have, basically, raised issues to be considered by the water

judge who should have routinely granted this (and any other application) and then periodically reviewed the conditional decree to assure that there was no material injury to other water users. In his opinion, the aggregate costs of opposing the application should not have exceeded $200,000.00.

The Applicant then called Kenneth Burk, another water lawyer, who indicated that he disagreed with much of Mr. Martz' approach. Instead, he chose to analyze what he perceived to be the failure of the Objectors to mitigate their expenditures by failing to timely file a Motion for Partial Summary Judgment on the Applicant's tributary claim.

It was his position, contrary to the position of Allison Maynard, former deputy Attorney General, who represented the State of Colorado on this case for a period of time, and who voluntarily filed an affidavit with this Court, that such a motion could not have been filed with this Court with a probable degree of success in 1989 as suggested by Ms. Maynard's affidavit, which was marked as an exhibit but never offered into evidence.

Mr. Burk contends that the issue first became germane only after the Applicant's amendment of its application and after answers to interrogatories had been served on November 15, 1990. He conservatively suggested that the Objectors were in a position to fully appreciate this fact – that the tributary claim was without merit – by February 15, 1991, and that they should have filed a Motion for Partial Summary Judgment on that issue within a reasonable period of time after February 15, 1991.

Objectors did not file such a motion at any time. They did file a Motion for Partial Summary Judgment concerning the nontributary claim on September 4, 1991, which was denied. Mr. Burk agreed that there were material issues of fact on the nontributary claim and that the Court properly denied that motion. He contends that there were no material issues of fact concerning the tributary claim from at least after February 15, 1991. The Objectors, through David Robbins, William Paddock, and John Hill, contend that they could not "prove" that Applicant intended to export water under the tributary claim until the amended application was filed in August 1990 even though they were suspicious of Applicant's intent almost from the very outset of the case.

They also contend that the amended application continued to claim substantial tributary water for use within the San Luis Valley, and that fact alone would have defeated a Motion for Partial Summary Judgment. That was the position argued by Mr. Ross, Applicant's counsel at the hearing on the Motion to Voluntarily Dismiss the Tributary Claim in October 1991. He also contended Applicant could "prove" beneficial use of the water claimed until the conclusion of its case on the merits.

Because summary judgment is a drastic remedy, it may never be granted where there is a genuine issue as to a material fact. ***Abrahamsen v. Mountain States Telephone & Telegraph***, 177 Colo. 422, 494 P.2d 1287 (1972). All doubts as to the existence of an issue as to material fact must be resolved against the movant. ***Primock v. Hamilton***, 168 Colo. 524, 452 P.2d 375 (1969).

While Mr. Burk was of the opinion that there was a high probability that a partial summary judgment motion, if filed, would have been granted, the Court concludes that there would have been genuine material fact at issue that would have required the Court to deny a motion for partial summary judgment on the tributary claim, if filed, just as it denied a motion for partial summary judgment on the nontributary claim.

It is evident from the testimony at the April 1992 hearing that the Objectors were very careful to minimize expenses and eliminate duplication of effort. The degree of coordination of effort by counsel for the various Objectors is to be commended. While the fees and expenses may seem high to some, they could have been substantially higher except for the remarkable coordination to avoid overlapping efforts of counsel and experts alike.

Much of the early expenses incurred by Objectors was the direct result of the Applicant's failure to timely and fully comply with discovery requests of the Objectors between January 1988 and May 1990. Similarly, the Applicant propounded an enormous amount of discovery to the Objectors resulting in a tremendous amount of attorney and expert witness time in order to properly respond to the request for information of the Applicant and the transfer of 20,000 documents from RGWCD alone. Eventually, Objectors received 40,000-50,000 documents from the Applicant.

Depending on when a new tributary claim may be filed, much of the material discovered by Objectors prior to September 1991 will be outdated, if not useless, in any

hearing concerning a "new" tributary claim. Any benefit from this earlier discovery is speculative at best.

Accordingly, the Court concludes that the expenditures incurred by the Objectors in defending against the tributary claim of the Applicant, which they believed to be the strongest of all claims advanced by Applicant, were both necessary and reasonable expenses except as hereinafter noted.

There is a paucity of state law interpreting Rule 41(a)(2), C.R.C.P. ***Tillery v. District Court***, 692 P.2d 1079 (Colo. 1984) simply states that a trial court may impose terms and conditions upon the voluntary dismissal of a claim by imposing an award of costs and fees. The ***Tillery*** case does not really address what costs and fees are appropriate. Therefore, this Court has looked to the wealth of federal case law interpreting "costs and fees" under the identical Rule 41(a)(2). See ***Powers v. Professional Rodeo Cowboys Association***, 16 Brief Times Reporter 758 (Colo. App. 1992).

Under Federal case authority, the purpose of awarding costs under Rule 41(a)(2) is to fully compensate the defendant for reasonable expenses incurred before dismissal and to deter vexatious litigation. ***Bishop v. West American Insurance Co.***, 95 F.R.D. 494 (1982).

The award of costs usually includes all litigation-related expenses incurred by the defendant, including reasonable attorney fees. ***American Cyanamid Co. v. McGhee***, 317 F.2d 295 (5th Cir. 1963); ***Green Grant Co. v. M/V Fortune Star***, 92 F.R.D. 746 (1981). ***Mann v. Edwards***, 37 F.R.D. 452 (1965) held that costs payable under Rule 41(a)(2) are not limited to taxable costs under Rule 54(d),

but may include compensation for all litigation-related expenses incurred by the defendant. A Court should weigh the equities and make a decision which seems fair under all the circumstances. ***American Cyanamid Co.***, supra.

RULE 41(a)(2) CLAIMS DISALLOWED

The Court has earlier by oral order disallowed court reporter fees. Colorado still claims reimbursement of $9,000.00 for court reporter fees. This sum is disallowed.

Some claims are unsubstantiated or unverified and must be disallowed, i.e., McMillen clients, Cotton Creek Ranch, Dennis Felmlee and Timothy Lovato.

A number of claimants seek additional compensation for preparing for this hearing, namely, RGWCD, RGWUA, COLO, CWCD, Oasis, First Interstate Bank and Howard Platz. These post-trial fees must be disallowed. Attorney fee claimants are not entitled to compensation for time spent preparing the fee application. ***Department of Highways v. Anvil Point Prop.***, 722 P.2d 1024 (Colo. App. 1986). Attorney fees incurred in a hearing on attorneys' fees cannot be recovered absent a determination that the defense lacked substantial justification. ***Little v. Fellman***, 21 Colo. Lawyer 342 (Colo. App. 1991). No such showing was made in this case to justify the award of additional attorney fees.

Further, Colorado has included in its claim the sum of $173,818.52 for compensation for nonlegal employees of the Division of Wildlife (DOW) and the State and

Division Engineer's Office (SEO). These are not litigation-related expenses and must be disallowed.

Certain room and board expenses properly attributable to the trial of the nontributary claim must also be disallowed under Rule 41(a)(2) as well as a claim for a $1300.00 bat detector[1].

The attorney fees and expenses claimed are well documented but out of an abundance of caution and so as to preclude any concerns about vagueness, overlap, possible redundancy or questionable expense, the Court discounts the attorney fee and expense claims under Rule 41(a)(2) by a factor of 10 percent. ***Kennecutt Corp. v. EPA***, 804 F.2d 763 (D.C. Cir. 1983).

RULE 41(a)(2) CLAIMS ALLOWED

The amounts allowed each Objector are as follows:

1. RGWCD:

A.	Attorney Fees	$488,932.20
B.	Expenses	134,622.90
C.	Consultant Fees	548,602.00
D.	Post-Trial Fee	.00
		$1,172,157.10

2. RGWUA:

A.	Attorney Fees	$251,832.60
B.	Expenses	32,830.77

[1] I know the State of Colorado has budget problems, but we can't attempt to "balance the budget" on the backs of litigants.

C.	Consultant Fees	100,245.33
D.	Post-trial Expenses	.00
		$384,908.70

3. SLVWCD:

A.	Attorney Fees	**$1,792.45**

4. USA:

A.	Attorney Fees	$130,509.00
B.	Paralegal Fees	10,142.66
C.	Expenses	8,270.00
D.	Consultant Fees	190,166.68
		$339,088.34

5. COLO:

A.	Attorney Fees	$187,133.40
B.	Paralegal Fees	22,433.40
C.	Expenses	5,755.25
D.	DOW Consultant Fees and Office Employees	66,861.50
E.	SEO Office Employees	.00
F.	Post-Trial Fees	.00
		$282,183.55

6. CWCD:

A.	Attorney Fees	$46,783.80
B.	Post-Trial Fees	.00
		$46,783.80

7. Oasis:		
	A. Attorney Fees	$1,487.25
	B. Post-Trial Fees	.00
		$1,487.25
8. First Interstate Bank:		
	A. Attorney Fees	**$6,901.11**
9. Howard Platz:		
	A. Attorney Fees	$1,070.55
	B. Expenses	397.80
		$1,468.35
14. Gayle Nichols:		
	A. Filing Fee	**$20.00**
TOTAL AMOUNT ALLOWED PURSUANT TO 41(a)(2):		**$2,236,790.40**

RULE 54(d) CLAIMS

The Objectors were instructed by the Court to prepare a Bill of Costs in accordance with Rule 54(d), C.R.C.P. They did so. Objection was raised as to numerous charges.

Bill of costs filed pursuant to Rule 54(d) are as follows:

1. RGWCD:		
	A. Expert Witness Fees (5)	**$257,227.00**

2. RGWUA:

A.	Docket Fee	$20.00
B.	Expenses (photocopying)	5,000.00
C.	Expenses (Misc.)	1,500.00
		$6,520.00

3. USA:

A.	Docket Fee	$20.00
B.	Expert Witness Fees (4)	126,640.13
C.	Expenses	16,873.52
		$143,533.37

4. COLO:

A.	Expert Witness Fees (3)	**$65,810.94**

TOTAL AMOUNT CLAIMED
PURSUANT TO RULE 54(d): **$473,091.31**

After considering the requirements of §13-33-102(4), C.R.S., and §13-16-112, C.R.S., the Court is persuaded that expert witness fees were necessary and reasonable and, specifically, that more than four expert witnesses were really necessary as follows:

Dr. Devraj Sharma	$145,602.00	RGWCD
Dr. David Cooper	8,165.00	RGWCD
Dr. Emlen Hall	10,191.00	RGWCD
Mr. Philip Emery	26,031.00	RGWCD
Mr. Allen Davey	67,264.00	RGWCD
Mr. William Bellis	48,164.14	USA
HRS Water (Messrs. Bodie & Harmon)	63,975.99	USA
Dr. Devraj Sharma	14,550.00	USA

Mr. Don Schrupp	1,295.95	COLO
HRS Water (Messrs. Bodie & Harmon)	65,514.99	COLO

The Court finds all other costs claimed are authorized by statute and are reasonable. All costs claimed under Rule 54(d) are allowed.

Accordingly, judgment will enter pursuant to the findings and conclusions of the Court with respect to the matters set forth above.

DATED this 29th day of May, 1992.

BY THE COURT:

[ROBERT W. OGBURN]

ROBERT W. OGBURN
Water Judge
Water Division 3
State of Colorado

Closed Basin Project & Baca Grant No. 4

San Luis Valley, Colorado